

# CITY OF WINNIPEG

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## ERECTION AND REMOVAL OF BUILDINGS FIRE LIMITS, ETC.

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### By-Law No. 7528

A By-Law of the City of Winnipeg to regulate the construction, repair, removal and inspection of buildings in the City of Winnipeg, and to prevent accidents by fire. This By-Law shall be known and may be referred to and cited as "The Winnipeg Building By-Law of 1913."

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*Extracts from the Winnipeg Charter*

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A copy of any By-Law, written or printed, and under the seal of the City, and certified by the Clerk, or acting Clerk, to be a true copy, shall be deemed authentic, and be received as *prima facie* evidence in any Court of Justice, without proof of the seal or signature, unless it be specially pleaded or alleged that the seal or the signature has been forged. (Sec. 480, Winnipeg Charter.)

Printed documents, purporting to be printed copies of any or all by-laws passed by the Council, and purporting to be printed by the authority thereof, shall be admitted as *prima facie* evidence in all Courts in this Province of such by-laws, and of the due passing thereof. (Sec. 481, Winnipeg Charter.)

## BY-LAW No. 7528

A By-Law of the City of Winnipeg to regulate the construction, repair, removal and inspection of buildings in the City of Winnipeg, and to prevent accidents by fire. This By-Law shall be known and may be referred to and cited as "The Winnipeg Building By-Law of 1913."

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*(Passed January 15th, 1913.)*

The Municipal Council of the Corporation of the City of Winnipeg, in Council assembled, enacts as follows:—

### 1. DEPARTMENT OF THE BUILDING INSPECTOR.

There is hereby created in the City of Winnipeg a Department to be called the "Department of the Building Inspector," which shall be charged with the enforcement of the provisions of this By-Law, as hereby enacted, for the regulation, survey and inspection of buildings, and the protection of same against fire or accident.

2. STAFF. The staff of said Department shall consist of a Chief, to be known as the Building Inspector, and as many Assistant Building Inspectors and other subordinates as may be found necessary from time to time.

Neither the Building Inspector nor any Assistant Building Inspector shall be employed or engaged in any other business, or be interested in any work for buildings, or for furnishing materials.

3. QUALIFICATIONS. In all future appointments the Building Inspector shall be an Architect, or a practical man of experience in building construction. Assistant Building Inspectors shall be men of experience in building construction in its several branches.

4. APPOINTMENT OF DEPUTY. In case of the temporary absence or disability of the Building Inspector and in default of an appointment being made by the Council, or Board of Control, he may appoint one of the Assistant Inspectors as his deputy, who shall during such absence or disability, exercise all the powers of the Building Inspector.

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5. **SUSPENSION OF BUILDING INSPECTORS.** Any one or more of the Assistant Building Inspectors may for any neglect of duty be suspended by the Building Inspector, and the suspension and cause of same shall be at once reported to the Fire, Water, Light and Power Committee or Sub-Committee of Council having jurisdiction over the Department, who shall take action on the matter as may be deemed fit.

6. **POWERS OF BUILDING INSPECTOR.** The Building Inspector shall exercise, in addition to the powers under this By-Law, all the powers and authorities contained in the Statutes of Manitoba known as the "Public Buildings Act" or any amendments thereof.

7. **DUTIES OF BUILDING INSPECTOR.** It shall be the duty of the Building Inspector, as Chief of his Department, to issue permits for the erection, enlargement or alteration of buildings, in accordance with the provisions of this By-Law; keep a record of the same, with a description of the construction, sanitary appliances, heating apparatus, elevators, fire escapes, and all matters relating to the regulation, construction or alteration of buildings in the City.

8. **ISSUANCE OF PERMITS.** It shall be the duty of the Building Inspector, on receipt of an application for a permit, accompanied by the plans and specifications for the proposed building or alteration, to carefully examine the same, and ascertain if the supports, beams and construction of the proposed building, are properly shown on said plans and described in said specifications, and if they are in accordance with the provisions of this By-Law and of the By-Laws of the City of Winnipeg relating to sanitation. If they do not conform with said By-Laws, he shall refuse to issue such permit. It shall be the duty of the person obtaining a permit to have same placed in a conspicuous place on the site of the building which said permit covers, or a metal tag bearing the number of said permit must be maintained in a conspicuous place until the completion of the building.

9. It will be the duty of the Health Inspectors and Police Officers to report to the Building Inspector all cases when these permits are not placed in a conspicuous place on or at any building in course of construction, and the Building

Inspector will then take such steps as will be necessary to insure the above requirements. By-Law 7528

10. REVOCATION OF PERMITS. Every permit shall be subject to revocation should the Building Inspector, or any of his Assistant Inspectors, ascertain that the work being carried on under such permit is being done in a manner that does not comply in every respect with the plans and specifications submitted for approval when such permit was granted. The revocation of a permit shall be in writing, and shall be served upon the owner or his agent, or in his absence on any one doing any of the work, and after such revocation of permit, all parties doing any work in or about such structure or premises shall render themselves liable to the penalties of this By-Law, and persons attempting to proceed with any of the works hereinbefore referred to will render themselves liable to be similarly dealt with.

#### 11. BUILDINGS ERECTED CONTRARY TO BY-LAW.

If the Building Inspector shall detect that any building or addition to any building or any structure or part of a structure has been erected contrary to the provisions of this By-Law, or any other By-Law of the City of Winnipeg relating to sanitation, the said Building Inspector is hereby authorized to pull down in whole or in part at the expense of the owner thereof, after giving twenty-four hours notice to the owner or agent to pull down, remove or make the same conformable to the By-Law, any building or structure or such part thereof as may in the opinion of the Inspector be constructed, repaired or placed in contravention of this By-Law, or any By-Law of the City of Winnipeg relating to sanitation, and the cost of the same may be certified to the Tax Collector, and be added to the taxes on the land occupied by such building and be collected as other taxes, after giving due notice thereof to the owner or agent.

12. EXAMINATION OF BUILDINGS. The Building Inspector and every Assistant Inspector, upon showing his badge of office, shall have the right to enter and examine all buildings in course of construction, alteration, repair or removal as often as practicable, or any building damaged by fire, or through accident, with a view to ascertaining the cause of the

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By-Law 7528 accident and the condition in which the fire or accident has left the building, or any building alleged to be unsafe or a menace to life and limb, and in case of any violation of the provisions of this By-Law and the refusal to comply therewith, the Building Inspector shall immediately notify the owner, agent, contractor, lessee, occupant or person having charge or possession of such building, or any part thereof, to make the same safe and secure or to take down and remove the same, or to make the same conformable to the provisions of this By-Law, and every such owner, agent, lessee, occupant or person having charge or possession thereof, as notified, who fails within twenty-four (24) hours to comply with such notice, shall be subject to all the penalties of this By-Law, and every subsequent failure or neglect for twenty-four hours after every similar subsequent notice shall be deemed a new and subsequent offence, and shall render the owner, agent, contractor, lessee or other person having charge thereof, so notified and making default, liable again to the penalties of this By-Law.

13. UNSAFE CONDITION OF BUILDINGS, etc. The Building Inspector shall have authority, if he finds any building or part thereof, or any staging, fence or other structure connected with a building or any fence or other structure, in such a condition as to endanger surrounding property or the lives of citizens and whereby the immediate adoption of precautionary measures, or by the demolition of the dangerous portion of said building, staging, fence or structure, such danger may be averted, to cause such precautions to be taken, or demolition to be made, or cause such work to be done as may be necessary to render such building or part thereof, or staging, fence or structure safe, after having given notice, either in writing or personally to the owner, contractor, lessee, occupant, or agent of said building, and to post up signs to warn the public of the unsafe condition of the building, staging, fence or structure, and the Building Inspector shall have the right, upon refusal or default on the part of the owner, contractor, lessee, occupant, or agent, to comply with the said notice, to enter such building or premises with such assistants as he may require and have the building, fence or structure secured or taken down, and the public protected at the expense of the owner, contractor, or other party interested, and the cost incurred by the Inspector in the performance of such work, shall be certified to the Tax



Collector and be added to the taxes on the land occupied by such building, fence or structure and be collected as other taxes. Should such work as hereinbefore mentioned be urgent, and in the opinion of the Inspector requires to be done without the delay necessary in notifying the owner or other party interested, he shall have the right to have the work done and recover the cost of same as hereinbefore provided, without first giving notice as aforesaid. By-Law 7528 .

14. **POWERS OF BUILDING INSPECTOR RELATING TO CONSTRUCTION.** The Building Inspector shall have full power to pass upon any question arising under the provisions of this By-Law relating to the manner of construction, or material to be used in the erection, alteration or repair of any building which has been reported, or is known by the Inspector to be in a dangerous condition in regard to its construction.

15. **DUTIES OF CIVIC EMPLOYEES RELATIVE TO THIS BY-LAW.** It shall be the duty of all officers, policemen, servants, workmen and agents of the Corporation of the City of Winnipeg, whenever required by the Mayor for the time being of the said City, to give all possible aid or assistance in his or their power, to the Building Inspector of the City in the discharge of his duty under this By-Law.

16. **MOLESTATION OF ANY PERSON ENFORCING REGULATIONS OF THIS BY-LAW.** No person shall molest or obstruct or interfere with the said Building Inspector, Police Officers or other persons acting in aid or assistance of such Building Inspector or Police Officers in the discharge of his or their duty under this By-Law.

17. **CARRYING INTO EFFECT REGULATIONS OF THIS BY-LAW.** It shall be lawful for any Police Officer in the said City and for the Building Inspector and his Assistant Inspectors to enter at all reasonable times upon any property subject to the regulations of this By-Law, in order to ascertain whether such regulations are complied with, or to enforce or to carry into effect the same.

18. **CONTRAVENTION OF THIS BY-LAW BY THE BUILDING INSPECTOR.** If the Building Inspector shall,

By-Law 7528 contrary to the provisions of this By-Law, permit or wilfully neglect or refuse to prevent the erection, placing or repair, or alteration of any building or any erection, wholly or in part put up, erected, repaired, or altered or placed contrary to the provisions of this By-Law, or any By-Law of the City of Winnipeg, he shall be liable to the penalties of this By-Law.

19. RIGHT TO APPEAL. Should any question arise between the Inspector and the owner of any building or structure, or his legal representative, or should the said owner or his legal representatives object to any order or decision of the Inspector, or should the Inspector refuse to issue a permit as required by this By-Law, then such person or persons objecting to such order, decision, or refusal of the Inspector, shall have the right to appeal from said order, decision or refusal, within three days after such order, decision or refusal to the Board of Appeal as hereinafter referred to.

20. APPEALING AGAINST EXPENSE. Should the Inspector incur any expense other than provided for in Section 12 of this By-Law, the owner or his legal representatives shall have the right to appeal to the Board of Appeal as hereinafter referred to.

21. APPEAL TO BE IN WRITING. Any person appealing from any order, decision or refusal of the Inspector shall, within the time mentioned, give notice to the Inspector in writing, that he does so appeal.

22. BOARD OF APPEAL. The Board of Appeal shall consist of three members of the City Council. Appointment of the said Board of Appeal to be made annually by the City Council. No member shall sit or adjudicate on any case in which he is interested, and in the case of such disqualification or in the absence of one member, the other two members shall have the right to appoint a substitute, subject to the approval of the Fire, Water, Light and Power Committee. If more than one member of the Board be disqualified or absent, the Inspector shall appoint one substitute, the Appellant another and, if necessary, the Fire, Water, Light and Power Committee another, and the said parties shall have the same powers as the members of the Board.

**23 BOARD OF APPEAL NOT TO ADJUDICATE ON QUESTIONS OF LAW** The said Board shall not adjudicate on any question of law, but on all matters referred to them respecting the construction or sanitation of buildings, or the application of this By-Law to the erection, repair or alteration of any building or structure, or to any order, decision or refusal of the Inspector which has been objected to, and appealed from, as provided in Section 18 of this By-Law, the decision of the Board, or of a majority thereof, shall be final and binding on both parties. By-Law 7528

**24 REQUIREMENTS FOR PERMITS.** It shall be the duty of every person or their agent or authorized representative, intending to erect, repair or alter a building or any platform or staging or flooring, to be used for standing or sitting purposes, or any tower or like construction in the City, to deposit with the Building Inspector, three days before commencing the excavation for or the erection, repairing or alteration of any such building, staging or platform, or tower or like construction, true copies of so much of the plans and specifications as may be required in the opinion of the Inspector to illustrate the features of construction and equipment of the building or other structure referred to, and if trusses or girders are to be in the building or structure, strain and section sheets of such shall be also furnished if considered necessary.

**25 PLAN TO REMAIN ON FILE** All plans shall remain on file in the office of the Building Inspector until the completion of said building or structure, after which such plans and specifications may upon demand therefor be returned by the Inspector to the parties by whom they were deposited, except the plans and specifications of theatres, churches, hotels, halls, apartment houses, tenement houses, warehouses, factories, shops, schools, colleges, hospitals, asylums, and all other buildings of a public character or intended for the occupancy of more than twenty-five people at one time, which shall remain on file as a permanent record in the office of the Building Inspector.

**26 PLANS WHICH MAY BE RETURNED OR DESTROYED** All plans other than those specially mentioned in the immediately preceding section, if not demanded by the parties depositing same within one year from the date of

By-Law 7528 issuance of permit, may be destroyed by the Building Inspector  
The intention to destroy such plans shall be made public

27 PLANS TO BE DRAWN TO SCALE All plans and drawings shall be drawn to a scale of not less than one-eighth of an inch to the foot in ink on paper or tracing linen, or be blue prints, and all distances and dimensions must be accurately figured and drawings made explicit and complete Under special conditions smaller scale may be allowed The live load which each floor is intended to sustain, over and above one hundred pounds per square foot, must also be shown on each floor, and if a floor is to be unequally loaded, the live load for each particular section must be indicated plainly on the drawings.

28 WRITTEN APPLICATION TO BE MADE FOR PERMIT No building, platform, staging or other structure shall be commenced until a written permit has been issued therefor by the Building Inspector The application for such permit shall be in writing on forms to be obtained at the office of the Building Inspector, upon which form the applicant must give clearly and fully the information asked and shall also give the correct estimated value of the work proposed to be carried out, and for which the permit to proceed is asked, which information is to be verified by a statutory declaration of the applicant when required by the Building Inspector

29 PERMIT NOT TO BE ISSUED UNLESS PLANS AND SPECIFICATIONS CONFORM TO BY-LAW If the matters mentioned in any application for a permit or if the drawings and specifications submitted with such application, indicate to the Building Inspector that the work to be done is not in all respects in accordance with the provisions of this By-Law, he shall not issue the permit therefor, but when such application, drawings and specifications conform to this By-Law, the Inspector shall certify and approve of same and the permit therefor shall be issued.

30 APPROVED COPIES OF THE PLANS AND SPECIFICATIONS TO BE KEPT ON THE WORKS Before a permit is issued to any applicant, said applicant shall furnish the Building Inspector with a second copy of the plans and specifications for the proposed work and the Inspector shall apply to such plans and specifications an official stamp stating

that the plans and specifications have been approved. Such additional copies of plans and specifications shall be returned to the applicant and shall be kept on the site of the proposed works until the completion of said works and shall be produced when demanded by the Building Inspector or any of his subordinates.

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**31 DEVIATION FROM ORIGINAL PLANS.** It shall be unlawful to erase, alter or modify any lines, figures or colorings on any drawing or specification certified to by the Building Inspector, or which have been filed for reference, except as hereinafter provided. If, during the progress of the work, it is desired to deviate in any essential manner from the terms of the applications, drawings or specifications, notice of such intention to alter or deviate shall be given in writing to the Building Inspector and his written assent must first be obtained before such deviation may be made and if he considers it necessary, new plans and specifications must be filed and approved. in default the Inspector shall be empowered to cancel the permit therefor and cause all work to cease.

**32 PERMITS LIMITED.** If, after permit shall have been issued, the operations called for by it shall not be begun, and reasonably continued, within three months of the date thereof, said permit shall be cancelled, and before such operations can be begun, or continued, a new permit shall be taken out by the owner or his agent, or authorized representative and fees as hereafter provided shall be paid therefor.

**33 ESTIMATE OF QUANTITIES.** Any person or contractor who desires to erect, repair or alter any building or structure shall, before the permit to proceed with the work is handed over to him, furnish the Building Inspector with a certificate showing the quantity of concrete, brickwork, stonework and plastering which he estimates will be in said building or structure, so as to enable the Water-Works Department to collect the proper charges for the water to be used in such building.

If the City water is to be used for the above-named building materials, the rates will be as follows:—

Brickwork, per thousand bricks	5c.
Plastering, per one hundred square yards.	25c.
Concrete, per cubic yard	5c.
Stonework, per cord	5c.

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34. **FEE FOR BUILDING PERMITS.** There shall be levied and collected from every applicant for a building permit, whether the application is for a new building or for repairs, alterations or additions to a building or other structure, when the cost of such building, repairs, alterations or additions or structure does not exceed the sum of \$500 the fee shall be 50c., over \$500 and not exceeding \$1,000 the fee shall be \$1.00, over \$1,000 and not exceeding \$2,000 the fee shall be \$1.50, over \$2,000 and not exceeding \$3,000 the fee shall be \$2.00, over \$3,000 and not exceeding \$4,000 the fee shall be \$2.50, over \$4,000 and not exceeding \$5,000 the fee shall be \$3.00, with an extra charge of \$1.50 for each additional \$5,000 or fractional part thereof.

35. **PERMIT FOR OCCUPANCY.** When it is desired to occupy a building for which a permit to build has been issued, the architect, or owner shall make a declaration in writing to the Inspector of Buildings that the building has been erected according to By-Laws of the City of Winnipeg, whereupon the Inspector of Buildings may within three days issue a certificate permitting occupancy.

No such permit shall be given until the plumbing and drainage system of such building has been inspected and tested as defined in the Plumbing By-Law of the City, found to be in accordance with such By-Law, and a certificate given by the Plumbing Inspector to that effect.

## DEFINITIONS

For the purpose of this By-Law, the following definitions of words and terms shall govern:—

36. **ALTERATION.** Any change, addition or modification in construction or grade of occupancy.

37. **AREA.** An opening below the surface of the ground, adjacent to, but not beneath a building, and used in connection therewith.

38. **BAY WINDOW.** A rectangular, curved or polygonal window supported on a foundation which projects from the balance of the enclosing wall.

39. **BUILDING.** Any structure erected by art and fixed upon or in the soil, composed of several pieces and designed for use in the position in which so fixed. By-Law  
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40. **BUILDING LINE.** Means the line of demarcation between public and private space, or the line prescribed by By-Law beyond which buildings are not to be erected.

41. **BASE COURSE OR BASE OF BUILDING.** The course or courses of masonry next to the grade line.

42. **BRICK.**

(a) **Common Hard Brick,** means brick burned almost to the point of vitrification, and giving out a clear ringing sound when struck with metal.

(b) **Pressed Brick,** means brick manufactured by high pressure in separate moulds, and burned to the highest point of consolidation without vitrification.

(c) **Cement Bricks,** means brick made of sand and Portland cement of the same dimensions as common brick and made to meet the same test requirements as common bricks.

(d) **Soft Brick** means brick which are light colored, sometimes called "Salmon Brick," of a soft crumbling nature and low crushing resistance, and which will not ring when struck with metal.

(e) **Push Placed Brick,** means brick which are laid in a bed of mortar and pushed or shoved into place in such a manner that all open space between the brick and the adjoining bricks at side, end and bottom are completely filled with mortar.

(f) **Sand and Lime and Cement Bricks,** means brick made of sand and lime of the same dimensions as common brick, and made to meet the same test of requirements as common brick.

43. **COLUMNS.** Isolated supports of wood, stone, concrete, iron or steel, re-inforced concrete, carrying the ends of beams, girders, hatsels or trusses. Stone, iron, steel or concrete columns may also carry arches.

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44. CEMENT Portland Cement is to be understood to mean such cement as will, when tested next, after setting one day in air, be capable of sustaining without a rupture a tensile strain of at least one hundred and fifty pounds per square inch, and after one day in air and six days in water, be capable of sustaining without rupture a tensile strength of at least four hundred pounds per square inch. Cement, other than Portland cement, is to be understood to mean such cement as will when tested, after setting one day in air, be capable of sustaining without rupture a tensile strain of at least one hundred pounds per square inch, and after one day in air and six days in water, be capable of sustaining a tensile strain of two hundred pounds per square inch.

45. INSPECTOR. The Building Inspector for the City of Winnipeg.

46. FACTOR OF SAFETY The quotient obtained by dividing the breaking load by the safe load.

47. FOUNDATION That part of the walls that are below the joists forming the first floor of a building.

48. FOOTING The projecting course or courses at the bottom of foundation wall or pier.

49. DWELLING OR HOUSE A building either detached or in block, used solely as a residence and occupied by not more than one family.

50. DUPLEX DWELLING A building used solely as a residence for two separate and distinct families, each having separate entrances, kitchen and bath rooms; when built detached on a lot not less than thirty-three (33) feet wide shall be considered a dwelling, but if built in block or a lot less than thirty-three (33) feet wide shall be considered a tenement.

51. FACTORY OR FACTORY BUILDING A building in which merchandise is manufactured.

52. FRAME CONSTRUCTION A building of which the external and party or partition walls are constructed of wood, and, although the sides and end are lathed, plastered and rough cast, or finished in stucco, or covered with corrugated iron or



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other incombustible material, the structure is to be considered a frame building

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**53. FIREPROOF BUILDINGS.** "Fireproof buildings" shall be taken to mean buildings in which all parts that carry weights or resist strains are constructed wholly of stone, burned clay, iron, steel or concrete, and in which all partitions, enclosures, stairways, elevators, hoistways and roof are made wholly and entirely of incombustible materials, and in which all metallic structural members are protected against the effect of fire by coverings of a material entirely incombustible, not injuriously affected by water, and a slow conductor of heat.

**54. GRADE.** The established grade is the grade of the street as fixed by the City of Winnipeg.

**55. GIRDER.** The horizontal structural piece or pieces which support the end of floor beams or joists or carry walls over openings.

**56. HEIGHT OF STOREY.** The perpendicular distance from the top of beams or joists in one storey to the corresponding point in the next storey.

**57. HEIGHT OF BUILDING.** Means the perpendicular distance measured from the sidewalk or curb level at the centre of the front of the building to the top of the highest point of the roof joists, in the case of flat roofs, and for pitched roofs the average height of the gables shall be taken as the highest part of the building. When the walls of a structure do not adjoin a street or lane then the average level of the finished ground adjoining, the walls may be taken instead of the street, sidewalk or curb level.

**58. ASSISTANT INSPECTOR.** Means a Building Inspector, subordinate to the Building Inspector for the City of Winnipeg.

**59. INCOMBUSTIBLE ROOFING.** A roof covered with not less than three (3) thicknesses of roofing felt and a good coat of tar and gravel, or with tm, corrugated iron or fire-resisting material, with standing seam or lap joint.

**By-Law 7528**      **60. LODGING HOUSE** Means a building in which persons are accommodated with sleeping apartments, and shall include hotels and tenements, where cooking is not done in the several apartments.

**61. LINTEL** A small beam or girder placed over a door or window opening, with the ends resting directly on the masonry

**62. LOADS ON BUILDINGS.**

(a) **Dead Load**, shall consist of the actual weight of walls, floors, roofs, partitions and all permanent construction

(b) **Live Load**, shall consist of all imposed, fixed or transient loads other than dead, due to the occupancy of the building and its exposure to wind pressure

**63. MANSARD ROOF** A roof, the lower part of which is deep pitched and the upper part much flatter.

**64. MASONRY** The term masonry shall apply to brick, concrete, stone, terra cotta or reinforced concrete construction

**65. MORTAR.**

(a) **Cement Mortar**, means mortar that is made with cement and sand in proportion of one part of cement to not more than three parts of sand, the ingredients to be measured and thoroughly mixed before the water is added, and the mortar to be used immediately after being mixed

(b) **Cement and Lime Mortar**, means mortar that is made with one part of lime and one part of cement and not more than three parts sand to each.

(c) **Lime Mortar**, means mortar which is made with not more than three parts of sand to one of lime. All lime used for mortar shall be good quality, thoroughly burned and properly slacked before it is mixed with sand.

**66. MILL CONSTRUCTION.** Means a building in which all the wooden girders and posts supporting floors and roof have a sectional area of not less than sixty-four square inches, and the floor and the roof systems are composed of heavy timbers and planked, with no concealed air spaces between.

67 OWNER. Means any person, firm, corporation, or agent for same, using and controlling property in the City of Winnipeg. By-Law 7528

68 ORDINARY CONSTRUCTION Means a building with wood joists and wood or iron posts, columns or beams, which are not protected with fire-resisting coverings, but having the external and party walls constructed with brick, stone or some other incombustible material, the roof of such building being covered with tin, iron, copper, slate, tile, felt and gravel or other material of an incombustible nature.

69 ORIEL WINDOW A projecting window similar to a bay window, but carried on brackets or corbels

70 OFFSET The offset, or change in thickness of a wall shall be regarded as being made at the top of the floor beam or joists.

71 PUBLIC BUILDINGS. Means every college, church, chapel, seminary, convent, school-house, hospital, asylum, hotel, hall for public meetings, places of public resort or amusement, or lodge room

72 PARTITION An interior subdividing wall.

73 PIERS. Isolated masses of brick work or masonry forming supports for arches, columns, girders, lintels, trusses and similar structural parts

74 POSTS. A term which, when used, means wooden supports or columns.

75 PIER CONSTRUCTION Means a mode of construction adopted in order to get a larger amount of opening in a wall than an ordinary wall construction will allow, the weight of the brickwork or masonry spandrel walls in each bay, and all weights supported by them, also the weights of all other constructional parts as well as the superimposed loads on the roof and floors is carried direct on beams or girders to main piers, which must necessarily be of greater transverse thickness than an ordinary bearing wall.

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76. **REPAIRS.** The reconstruction or removal of any part of an existing building for the purpose of its maintenance in its present class of construction and grade of occupancy

77. **REINFORCED CONCRETE CONSTRUCTION** Means an approved concrete mixture reinforced by steel of any shape, so combined that the steel will take up the tensional stresses and assist in the resistance to shear, and construction of such nature that the stresses can be calculated according to the accepted formulae of modern engineering practice.

78. **STOREYS.**

(a) Basement, means a storey the floor of which is three (3) feet or more below the finished grade of the lot or the level of the sidewalk.

(b) First Storey, means the storey the floor of which is first above the basement storey.

(c) Second Storey, means the storey the floor of which is first above the first storey. Other storeys are to be numbered in regular succession counting upwards.

79. **SKELETON CONSTRUCTION** Means all buildings wherein all external and internal loads and strains are transmitted from the top of the building to the foundation by a framework of metal.

80. **TENEMENT HOUSE** Means any house or building or portion thereof which is rented, leased or occupied as the home or residence of more than two families living independently of each other, but having a common right in the halls, stairways, yards, water closets or privies, or some of them, and every building now or hereafter in existence, not now used as a tenement house, hotel or lodging house, but hereafter converted to such use.

81. **THEATRE.** Means a building having a stage with fixed and movable scenery, and used for the purpose of giving public performances of theatrical or operatic character or concerts.

82. **VENEERED BUILDINGS.** Means a frame structure, the walls of which are covered above the foundation walls

with brickwork or terra cotta not less than four inches in thickness or with stonework not less than six inches thick, which in either case is properly secured to the woodwork. By-Law  
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83. **WAREHOUSE** A building used for the storage of merchandise.

#### 84. **WALLS**

(a) **Apron Wall**, means that portion of an enclosing wall between the door and window sills of storey, and the door and window or lintels of the next storey below.

(b) **Bearing Wall**, means the wall upon which either or both the floor and roof construction rest.

(c) **Curtain Wall**, means the enclosing wall of an iron or steel skeleton frame, or the non-bearing portion of an enclosing wall between piers.

(d) **External Wall**, means every outer wall of a building other than a party wall.

(e) **Foundation Wall**, means that portion of an enclosing wall below the first tier of floor joists or beams nearest and above the grade line, and that portion of any interior wall or pier below the basement floor.

(f) **Partition Wall**, means any interior wall in a building.

(g) **Party Wall**, means a wall used or built to be used as a separation of two or more buildings, or a wall built upon the dividing line between adjoining premises for their common use.

(h) **Retaining Wall**, means a sub-surface wall built to resist the lateral pressure of the adjoining earth and to prevent its caving in. Also an enclosing wall built to resist the lateral pressure of internal loads and to prevent its caving in.

(i) **Thickness of Wall**, means the minimum thickness of any wall, when nine, thirteen, seventeen or twenty-one inch walls are required is to be understood to mean that such walls are to be one brick, one and one-half bricks, two bricks, two and one-half bricks in thickness respectively, and heavier walls are to be figured for thickness in the same proportion.

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## 85. CLASSIFICATION.

(a) First-class Buildings, means all buildings of fire-proof construction.

(b) Second-class Buildings, means all buildings of which the external or party walls are of brick, stone or equally substantial and incombustible material.

(c) Third-class Buildings, means all buildings having the external or party walls constructed by similar material to second-class buildings up to the first floor, but constructed of frame work in whole or in part, or having more wood on the exterior walls above the first floor than is required for the door and window frames, doors, sashes, shutters and verandahs, notwithstanding that this wood is wholly covered with slate, tile, plaster or other incombustible material.

(d) Fourth-class Buildings, means frame structures, the exterior walls of which are veneered with brick, stonework or lathed, plastered and rough-cast or finished stucco.

(e) Fifth-class Buildings, means frame structures covered with galvanized iron, corrugated or otherwise, or metallic siding.

(f) Sixth-class Buildings, means frame structures when the enclosing and interior partition walls are constructed entirely of wood, plaster, etc.

## 86. REQUIREMENTS AS TO CONSTRUCTION OF BUILDINGS.

(a) All buildings hereafter erected, repaired or altered in the City of Winnipeg so as to exceed seventy feet in height, except churches and grain elevators, shall be of first-class construction throughout, and churches containing a seating capacity of 1,200 or more people in the auditorium must be of fireproof construction up to and including the main auditorium floor.

(b) Buildings other than the above referred to may be erected in masonry, ordinary or frame construction in the several limits hereinafter described, save as provided for in the various sections hereinafter prescribed, but all such buildings shall be so divided by brick division walls, of the

thickness hereinafter prescribed, that no space inside of any such building shall exceed in area eleven thousand square feet, all such division walls shall be carried not less than twelve inches above the roof at every point. All buildings when over three storeys in height shall be so constructed that no floor shall be supported wholly or in part by wooden partitions, said floors must be supported on girders or beams extending from wall to wall.

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(c) No building shall hereafter be erected or altered to exceed one hundred and twenty feet in height, unless such building is furnished with auxiliary pumps and other special fire extinguishing appliances which have been approved by the Building Inspector, and unless the plans of such building have been submitted to the Building Inspector and approved by him.

(d) No wooden or frame building shall be erected or altered so as to exceed thirty-five feet in height.

(e) No brick veneer shall be allowed for more than two storeys, and the whole height from the ground to plate shall not be more than twenty-five feet, and no gable shall exceed this height by more than ten feet, and every fourth course of brick must be nailed to the studding every two feet with five-inch nails.

(f) No building shall have a greater height in proportion to the least dimensions of its base than that set forth in the following table:—

For buildings with skeleton frame, five times; with masonry walls only, four times; for buildings of mill construction, three times; with ordinary construction, two and one-half times, frame buildings, one and one-half times. This also applies to wings of buildings whose length exceeds two and one-half times their width, provided no building shall exceed the maximum height established for its respective class. It is to be understood that in all cases the height of a building is to be measured as described in the section of this By-Law dealing with the definition "Height of Building."

(g) No dwelling house or other building intended for human habitation shall hereafter be erected fronting on any

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street, lane, alley or other public place within the City of Winnipeg which is less than thirty feet in width.

(A) Every dwelling house or terrace of dwellings shall be so located and erected as to provide for and preserve at least twenty per centum of the area of the lot, plot and premises on which the same is erected, free from all obstruction from ground to sky

87 All water closet compartments in dwellings shall be provided with light by a window in an external wall. Every such window shall be at least one foot by three feet between stop beads, and the entire window shall be made as to readily open.

88. The following sections, numbered 89 to 104 inclusive, shall apply only to the portions of the City of Winnipeg within the First and Second-class Fire Limits, as hereinafter defined.

89 CONSTRUCTION OF BUILDINGS. No building or any addition to any existing building within the First-class Fire Limits shall be erected or placed on old or new foundations or on foundations partly new and partly old, unless the same shall be built with main walls of brick, steel, iron, stone or concrete, and roofing of incombustible material. The foundations of all such buildings shall be laid a depth of not less than four feet six inches below the street grade at any point. The following buildings shall be exceptions.—

90. DWELLINGS. Within the residential portion of the First and Second-class Fire Limits, all modern frame detached dwelling houses upon full stone, brick, concrete or cement block basement may be erected. Such houses shall be built and arranged for the use of only one family. The term "All Modern" shall be taken to include full plumbing, electric or gas lighting and a modern heating system, such as hot air, hot water or steam. Roofs of all such buildings shall be of incombustible material

91 STOREHOUSES. Storage sheds not more than sixteen feet in height at the highest point and constructed with walls and roof of corrugated iron fastened to ribbons without any wood sheathing on studs and to be used for storage pur-



poses only, may be erected within the First-class Fire Limits, provided that storage sheds as above will not be allowed in the inner First-class Limits hereinafter defined

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92. OPEN SHEDS. Open shelter sheds, not exceeding twelve feet in height at the highest point and covering and extending over a space of ground not more than three hundred (300) square feet in area, having the whole of one of the longer sides open, may be erected within the First-class Fire Limits, provided that the walls and roof of said building shall be covered with metal.

93. OUTHOUSES. Sheds detached from all other buildings on the same lot, and distant fifteen (15) feet from the nearest dwelling and not exceeding twelve (12) feet in height at the highest point, and covering and extending over a space of ground not more than one hundred and forty-four (144) square feet in area, may be erected with walls of wood and roofing of incombustible material within the First and Second-class Fire Limits, such sheds within fifteen (15) feet of any dwelling shall have the walls and roof covered externally with metal.

94. PRIVATE GARAGES. Automobile shelters appurtenant to and on the same lot as private dwellings, may be erected of wood with roofing of incombustible material, within the First and Second-class Fire Limits, if such buildings are at least twenty (20) feet distant from the nearest dwelling, but if within twenty (20) feet of any dwelling the walls and roof shall be covered externally with metal.

95. PRIVATE STABLES. Stables with accommodation for not more than four (4) horses, appurtenant to and on the same lot as private dwelling houses, may be erected of wood with roofing of incombustible material, within the First and Second-class Fire Limits, if such buildings are at least twenty (20) feet distant from all other buildings, but if within twenty (20) feet of any dwelling the walls and roof shall be covered externally with metal.

96. No fence or part of a fence shall be used as a portion of a building in the First or Second-class Fire Limits.

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97 The external main walls of all main buildings within the Second-class Fire Limits, if not made of brick, iron or stone, shall have, if more than two storeys high, either stone, brick or concrete foundations and be veneered or encased on the outside with brick or iron, or the same shall be plastered on the outside with at least two coats of hair mortar or cement, the roofing of all such buildings shall be of incombustible material.

98. No person shall alter or repair with wood the external walls of any already existing building within the First and Second-class Fire Limits, when such external walls are made of brick, iron or stone, the same shall not be repaired or altered except with brick, iron or stone, but if the external walls of such building are made of wood, or if the same are brick veneered or plastered or encased with iron, then the repairs or alterations of such external walls shall be made with brick, iron or stone, or by veneering or encasing the same with brick or iron or plastering the same on the outside with at least two coats of hair mortar or cement.

99 A stone or other substantial foundation may be placed under any wooden building already existing, but no wooden sills or posts shall be made a part of the foundation of the main walls of any building hereafter to be erected, altered or repaired within either the First or Second-class Fire Limits.

100. Any building within the First or Second-class Fire Limits, having a pitched roof, may have a flat roof of incombustible material substituted for such pitched roof, the walls of the building shall be carried up to meet the requirements of such change in the pitch of roof, provided that the highest point of such flat roof shall not exceed the highest point of the roof to be removed.

101. No person shall repair or alter the roof of any existing building within either the First or Second-class Fire Limits, except with incombustible material.

102. A wooden building within the First and Second-class Fire Limits may be moved to a different location on the lot on which it stands, provided that in the opinion of the Inspector of Buildings the risk of fire will not be increased.

103. All buildings within the First and Second-class Fire Limits for dwellings or otherwise, erected in terraces or rows, shall have brick division walls in such positions that every two dwellings or compartments shall be divided by such division walls. The division wall shall be in no case less than nine inches in thickness, and shall be carried up flush with the upper edge of the rafters of the roof and the sheathing boards shall be bedded in mortar in such walls. By-Law  
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104. Any removal, raising or enlargement of any building within the First or Second class Fire Limits shall be considered a re-erection and subject to the provisions of this By-Law, and any alteration of the walls, roofs, partitions or floors thereof, and any repairs to any building which it will be necessary to execute on account of dilapidation, decay, injury by fire or other cause, when the cost of such repairs or alterations shall equal forty per cent of the actual value of such building, shall be considered a re-erection and subject to the provisions of this By-Law

105. TENTS. No person shall erect within either the First or Second-class Fire Limits any wooden building or structure partly of wood, partly of canvas, felt or other like materials, tents or other similar structures or additions thereto or alterations thereof

106. STREET PERMITS. It shall be the duty of every builder and of the owner where there are two or more builders for the same structure, to give notice to the City Engineer before any lumber, stone, brick or other building materials are placed on any sidewalk or street, and thereupon the city Engineer shall determine what portion or portions, if any, of the street or sidewalk is or are necessary for the purpose of such erection or alteration, and upon such determination shall give to the builder or other person lawfully demanding the same, a permit in writing defining what portion of the street or sidewalk, if any, may be temporarily used by the builder during the erection of any such building or the making of any such alterations or repairs, and for what period such portion or portions may be so used.

107 MATERIALS ON STREETS. No person shall place any building or other material on any part of the streets

**By-Law 7528** or sidewalks of the City except after receiving a permit to do so as aforesaid, and then only on such portion of the street or sidewalk allowed to be used and mentioned in such permit. Such materials shall not be piled to a greater height than six feet, nor so as to obstruct the free passage of water in the drains, gutters or water courses along the street or sidewalk, nor shall any person prepare or mix any mortar, or cut or dress any stone or lumber on any street or sidewalk in the City, or in the space allotted or mentioned in such permit, or pile thereon any material or earth taken from the site of the building proposed to be erected, repaired or altered, except such as may be required for subsequent use in such building.

**108. REMOVAL OF MATERIAL.** No person shall suffer or permit any building material or plant brought by him upon any street or sidewalk, to remain any longer than the duration of the permit of the City Engineer, or any extension thereof, or whilst the same remains in force and upon the completion of the walls and outside work of any such building or upon the expiration of the permit of the City Engineer, whichever happens soonest, the owner, builder or other person who has brought such material or plant upon any such street, shall immediately remove all such material or plant from the street or sidewalk and cause the street and sidewalk to be cleaned and repaired and placed in as good condition and repair as the same were before such material or plant were placed thereon. In the event of any contractor failing or neglecting to remove any such material or plant as aforesaid or failing to cause the street or sidewalk to be cleaned and repaired as aforesaid, when required so to do by the City Engineer, the City may remove any such plant or material or clean and repair any such sidewalk or street as the case may be, at the contractor's expense, and the contractor shall thereupon pay to the City the cost of such removal, cleaning or repair. The certificate of the City Engineer as to the amount of such cost shall be final and binding on the contractor.

**109. REMOVAL OF SIDEWALK.** The person or persons receiving such permit shall, before commencing to excavate or build or to make any alterations, remove the sidewalk, if any such there be, or cover or protect the same the full length of the building proposed to be erected, altered or repaired, and

enclose with a board fence six feet in height the portion of the sidewalk and street allowed to be used and mentioned in such permit, and place around the outside of such fence a wooden platform or footpath at least four feet wide, with a strong hand rail, three feet high around it for foot passengers, should the City Engineer so direct, and keep the said platform and hand-rail, if any, in proper order until the said building, alterations or repairs is or are finished, but if the said sidewalk is made of granolithic pavement or of flag stones or other permanent material, the same shall be covered over and protected as may be ordered by the City Engineer, and as mentioned in the permit. By-Law 7528

110. TEMPORARY FOOTPATHS. The footpath in front of any building being erected on the line of street shall be at all times clear of any obstruction, in cases where footpaths shall require to be raised above the actual level, said footpath shall be strongly built so as to carry a minimum load of one hundred and fifty pounds to the square foot, with proper steps or gradients to give proper access to and from it. When required by the City Engineer the said footpath, whether on the street level, or raised, shall be roofed to at least eight feet high, clear from the path, and the supports of said roof shall be made sufficiently strong so as to carry safely a roof at least two inches thick and to bear the weight of any falling materials from upper storeys. Said roof shall be water-tight.

111. CONTRACTOR TO BE RESPONSIBLE. Every person who erects or maintains over the sidewalk or footway of any street a covered way, or who deposits any building material on any street, sidewalk or footway under a permit from the City Engineer, shall be responsible to the City for and shall indemnify the City against all damages or injuries thereby occasioned to any person or property and a red light upon all such obstruction shall be maintained from sunset to sunrise by and at the expense of the person occupying any of the streets of the City under such permit.


112. ADVERTISING MATTER ON FENCING OR BARRICADES. No notice or signs or advertisement of any kind are to be placed upon any covered way, fencing or barricades constructed in front of any building in course of erection other

**By-Law** than those of the owner or occupant, and then only such as may  
**7528** be approved by the City Engineer

**113 OBTAINING GRADE OF STREET** Before any building is commenced on any public street, the person or persons desirous of erecting such building, or some person on his behalf, shall obtain from the City Engineer the proper grade of such street as adopted by the Council or as established by law. Said Engineer shall, upon request in writing therefor, and within one week of the date of such request, furnish to such person desiring to erect any such building, or the person in his behalf making application, the said grade of street.

**114. AREAS UNDER SIDEWALKS** Any person desiring an area, opening, tunnel or coal chute to be constructed in or under the sidewalk and street opposite his property shall apply through the City Engineer to the Council for permission to have the same constructed, and shall submit to the Engineer a plan thereof. The City Engineer, if satisfied as to the safety of such area, opening, tunnel or coal chute, may recommend to the Committee on Works and Property that permission be given, and the said Committee, if it approve of the Engineer's recommendation, shall so report to the Council, but no area, opening, tunnel or coal chute shall be constructed until the permission shall have been given therefor by the Council. If the Council give permission to construct such area, opening, tunnel or coal chute the City Engineer shall see that same is constructed in accordance with the permission of the Council, and so as to render the sidewalk and street as safe as possible for the use of the public after such construction and thereafter such area, opening, tunnel or coal chute shall be kept in good and sufficient repair by the person owning the premises opposite which the said area, opening, tunnel or coal chute has been constructed; every such coal chute shall be constructed at the outside edge of the sidewalk.

**115 KEEPING AREAS IN REPAIR** All area openings, tunnels and coal chutes heretofore constructed, as well as those authorized under this By-Law, may be continued in use until the license therefor is revoked by the Council, and until such license is so revoked the owner or occupier of the properties opposite which the same exists shall keep such areas, openings,



tunnels or coal chutes in good and sufficient repair, and it shall be the duty of the City Engineer to report to the Council on all such areas, openings, tunnels or coal chutes which are out of repair, for the Council to decide whether or not to revoke said license. By-Law 7528

116. FEE FOR AREAS. An annual charge of five cents per square foot of surface area shall be imposed and charged for all areas and tunnels in and under the sidewalks and streets of the City

117. FEE FOR COAL CHUTE. An annual charge of one dollar shall be imposed and charged for each coal chute in or under the sidewalks and streets in any part of the City

118. ASSESSMENT COMMISSIONER TO MEASURE AREA OR OPENING. The Assessment Commissioner shall measure each area, opening or tunnel in or under the sidewalk or streets, and compute the annual charge to be made against the respective owners of the premises in front of which such areas, openings or tunnels exist, before the preparation of the Collector's Roll each year, so that he may enter the same opposite the properties in respect of which the said charges are rated or imposed, and he shall ascertain what coal chutes exist in the said City, so that such charge may be likewise inserted in the Collector's Roll for each year, and the same shall be thereupon rated against such properties and thereafter shall be levied and collected with taxes for the current year in the same manner as other municipal taxes.

119. UTILIZATION OF SPACE UNDER SIDEWALKS. Any person desirous of utilizing the space under the sidewalk in front of any building owned by him in the said City shall construct a sufficient stone, brick or concrete wall to retain the roadway of the street and shall extend the division walls and party walls of such building under the sidewalks to such curb walls. All openings in the sidewalks shall be covered with prismatic lights not exceeding sixteen square inches in iron frames or with iron covers having a rough surface, and in no case shall such covers have a smooth surface. No plain surface of glass exceeding sixteen square inches shall be placed in the sidewalk.

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## SCAFFOLDING

120. TEMPORARY SUPPORTS Any temporary supports placed under any structure wall, girder or beam during the erection, alteration or repairing of any building or structure, or any part thereof, shall be of sufficient strength to safely carry the load to be placed thereon.

121. SCAFFOLD, STAGING AND HOIST Scaffolding, staging, hoists and such other appurtenances of building operations, must be amply strong and secure for purposes intended.

122. OUTSIDE SCAFFOLDS Outside scaffolds, either supported by continuous supports from the ground up, or upon thrust-outs from windows and walls above the third floor, shall be provided with tight plank floors and ten (10) inch curbs and two (2) by four (4) inch handrail, thirty-four (34) inches high on the outside, and when such scaffolds are constructed at a height of over sixty feet from the ground, there shall be a guard rail filled in with wire netting not exceeding two (2) inch mesh or seven-eighths ( $\frac{7}{8}$ ) inch boards not over one-half ( $\frac{1}{2}$ ) inch apart, secured to uprights not less than two (2) inch by four (4) inch scantlings thoroughly braced and secured. In the case of swinging scaffolds, they must be sufficiently guyed to prevent them from swaying.

123. TEMPORARY FLOORING As soon as the walls of a building in course of construction have reached the level of the first floor and the joists of such floor have been placed in position, the said joists shall be covered temporarily or otherwise with boards or planks in such manner as to secure the safety of workmen engaged on the premises, and as the building progresses from floor to floor the joists of each such floor shall be similarly covered. In each case where the joists are over sixteen inches apart from centres and up to four feet centres, two-inch plank shall be used. In case of steel structures where the girders are twelve feet centres or over, not less than two-inch plank shall be used. Such planks to be supported in all cases so as to insure reasonable safety.

## EXCAVATION

124. EXCAVATIONS TO BE PROPERLY GUARDED All excavations for buildings shall be properly guarded and



protected by the person, persons or corporation causing them, to be made, so as to prevent the same becoming dangerous to life and limb, and shall be sheet piled where necessary, to prevent the adjoining earth from caving in by reason of its own weight or by reason of any load that may rest upon it.

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125. WHEN CONTIGUOUS WALLS ARE TO BE UNDERPINNED BY PARTIES BUILDING. Whenever an excavation shall be carried to a greater depth than four feet below the adjoining street, lane or sidewalk the person or persons making or causing such excavation to be made shall preserve any contiguous wall from injury, and also the street, lane or sidewalk, and sustain and protect and underpin the same at his or their own cost and expense, so that the said wall, street or sidewalk shall be made to remain practically as safe as before such excavation was commenced.

126. DRAINAGE. Before the walls of any building are carried up above the grade level, the basement shall be connected with the street sewer through drain tiles and catch basins and weeping drains of porous tile, glazed tile or broken stone pipes, covered with at least six inches of broken stone shall be laid around the foundations, if such drains be laid outside they shall be connected through the walls with the inside drain tiles.

127. BASEMENT FLOORS. Every basement of a dwelling or any other building when used for storage or any other purpose shall have a bed of cement concrete not less than four inches thick spread over its entire bottom, and be finished with a surface of cement mortar not less than one inch thick, and be properly graded to catch basin. Where wood floors are to be laid in such basements, sleepers shall be placed on top of the concrete.

## FOUNDATIONS

128. Foundations shall be proportioned for the actual average loads they will have to carry in a completed and occupied building, and not for theoretical or occasional loads; provided, however, that in determining the carrying capacity of footings, piers and columns in dwellings, office buildings, stores, stables and public buildings which are over five storeys in

## ERECTON AND REMOVAL OF BUILDINGS, FIRE LIMITS, ETC.

**By-Law 7528** height, a reduction of the live loads shall be permissible as follows. For the roof and top floor, the full live loads shall be used, for each succeeding lower floor, it shall be permissible to reduce the total live loads by five per cent, until fifty (50) per cent of the live loads hereinafter fixed for the different classes of building is reached when such reduced loads shall be used for all the remaining floors.

**129. MATERIAL OR FOUNDATIONS.** Foundation walls of any building must be built of hard brick, stone or other hard and incombustible material, and where there is a basement, the walls below the surface of the ground shall be fully protected from dampness by an exterior covering of a coating of Portland cement mortar.

**130. PILES TO BE DRIVEN TO A SOLID BEARING.** Piles intended to sustain a wall, pier or post shall be driven to a solid bearing if practicable to do so, and the number of such piles shall be sufficient to support the weight imposed thereon.

**131. SIZE AND MATERIAL OF PILES.** Piles shall not be less than six inches in diameter at the small end and twelve inches at the butt, and shall be of concrete or hemlock, tamarac, or other hard wood, and be spaced not more than thirty-six (36) inches or less than twenty-four (24) inches apart from centres. There shall be not less than two rows of piles under all external party or other walls less than seventy (70) feet high, provided, however, that a single row of piles may be used under walls not exceeding twenty-five feet in height, if all other conditions of stability are complied with.

**132. FORMULA FOR DETERMINING SUSTAINING POWER OF PILE.** No pile shall be weighted with a load exceeding twenty-five tons. Where a pile is not driven to a refusal, its sustaining power shall be determined by the following formula—Twice the weight of the hammer in pounds, multiplied by the height of the fall in feet, divided by the penetration of the pile in inches, plus one under the last blow.

**133. SIZE AND KIND OF WOOD IN RANGING AND CAPPING TIMBERS.** If the pile construction is used under water and ranging and capping timbers are laid on piles for a foundation, they shall be of hard wood, not less than six inches

in thickness and properly jointed together with the top of the uppermost timber laid below water, and the timber shall be of sufficient size to safely transmit the load to the piles. By-Law 7528

**134. FOOTINGS FOR FOUNDATION WALLS AND PIERS.** The foundation walls of every building and the internal supports shall rest upon footings of concrete, steel or iron bedded in concrete, stone or hard burned brick, resting upon firm solid ground and not upon filled in material or soil containing an admixture of organic matter

**135. TEST PILES TO BE DRIVEN** The Building Inspector shall be notified of the time when test of initial piles will be driven, so that he may be present in person, or have a representative on the ground. The tops of all piles in permanently wet earth shall be cut off at least nine inches below the footings, and concrete shall be rammed down in the interstices between the piles, and be continued up to a depth or thickness of not less than nine inches above the heads of them, the concrete to be continued the full depth and to a width of at least one foot on each side outside of piling

**136. REINFORCED CONCRETE FOUNDATION** If steel rails or beams are used as a part of a foundation they must be coupled together and laid on a bed of Portland cement concrete, extending not less than eight inches below and on all sides of the rails. The concrete footing course shall be given two heavy coats of asphalt before the rails or beams are laid, or the beams may be painted with two coats of pure Portland cement liquid grout or two coats of red lead and oil. The beams or rails must be entirely enveloped in concrete, rammed so that the interior of the mass will be free from cavities and around the exposed external surfaces of such concrete foundations there must be a coating of Portland cement mortar not less than one inch thick. In foundations reinforced with steel rails, the extreme fibre strain on the metal must not exceed sixteen thousand pounds per square inch

**137. INGREDIENTS AND PROPORTION OF SAME IN CONCRETE.** The proportion of cement, sand and broken stone in concrete used for footing or foundation walls shall be as follows.—One part of Portland cement to not more than two

**By-Law 7528** parts of sharp, gritty sand and five parts of clean beach gravel or clean stone, broken so as to go in any way through a two and one-half inch ring. The same to be mixed in an approved concrete mixer, if mixed by hand the sand and cement to be thoroughly mixed dry and until the mass shall be uniform color, then water to be put on and the mixing continued until a good mortar is formed, when the stone, after being dampened, is to be added and the entire ingredients turned over and over until they cling together in a pasty mass. All concrete shall be used immediately after being mixed and before it begins to set. The offsets of concrete footings, not reinforced, to be not less than one-half the depth of the course below.

**138. THICKNESS OF FOUNDATION WALLS IN VENEERED BUILDING.** Foundation walls for two storey and attic veneered building or buildings with a flat roof, which are not over thirty-five (35) feet in height from the ground floor to the highest point of the roof are not to be less than thirteen inches in thickness of brick or concrete, and not less than sixteen inches of stone, in either case the walls to have footings not less than six inches in thickness and projecting not less than four inches on each side beyond the wall above.

**139. FOUNDATIONS FOR FRAME, ROUGH CAST OR STUCCOED BUILDINGS.** Frame, rough-cast or stuccoed buildings of a similar height to those referred to in the last preceding paragraph, may have nine-inch brick foundation walls with fourteen inch footings, not less than six inches in thickness, but in either case the walls are not to exceed eight feet in height. Buildings of this class may also rest upon concrete foundations of the same dimensions. If stone is used, the thickness of foundation wall to be not less than sixteen inches.

**140. PERMISSIBLE LOAD ON SOIL.** The permissible load per square foot to which different kinds of soil under the foundation walls and piers of building may be subjected to is as follows —

	Tons per square ft.
Dry hard clay . . . . .	3
Moderately dry clay . . . . .	2
Soft wet clay . . . . .	1
Alluvial soils . . . . .	$\frac{1}{2}$

The width of all footings and ranging timbers shall be at least sufficient to meet these requirements. By-Law  
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#### 141 TESTING SUSTAINING POWER OF EARTH

Where a doubt arises as to the safe sustaining power of the earth upon which a building is to be erected the Building Inspector may order borings to be made or direct the sustaining powers of the soil to be tested by and at the expense of the owner of the proposed building.

**142 ALLOWABLE LOADS PER SQUARE FOOT ON BRICKWORK, MASONRY, ETC.** The load per square foot placed upon walls, piers or other supports of masonry constructed of first-class materials of the several kinds mentioned, shall never exceed the limits given in the following table —

	Safe load per square ft.
Kiln run bricks laid in lime mortar .....	3 tons
Kiln run bricks laid in Portland cement mortar .....	5 tons
Hard bricks laid in lime mortar .....	6 tons
Hard brick laid in Portland cement and lime mortar .....	9 tons
Hard brick laid in Portland cement mortar .....	12 tons
Pressed brick laid in lime mortar .....	8 tons
Pressed brick laid in Portland cement mortar .....	14 tons
Rubble stonework in lime mortar .....	4 tons
Rubble stonework in lime and cement mortar .....	6 tons
Rubble stonework in Portland cement mortar .....	8 tons
Concrete, one part cement, two parts sand and five parts of stone .....	15 tons

**143 BONDS, STONES OR IRON PLATES ON PIERS, ETC.** All piers, buttresses or pilasters that carry two-thirds of their safe load, and are less than five bricks in width on any side, shall have cast iron plates or bond stones every four feet in height, the bond stones to be not less than two courses of brick or six inches in thickness and the full size of the pier, buttress or pilaster, and all such piers, buttresses or pilasters shall be capped with stone or iron cap.

#### GENERAL CONSTRUCTION

**144.** The walls of all brick buildings shall not be built of less thickness than is contained in the following tables —

**By-Law 7528**      **Brick buildings used as Dwelling House, Tenement House, Lodging House or Hotel.**

No. of Storeys	Foundation Walls			Floors		
	Stone in.	Brick in.	Concrete in.	1st in.	2nd in.	3rd in.
One ..	16	13	10	9	.	.
Two ..	18	15	10	9	9	..
Three .	20	17	12	13	13	9

145. For building used as Office Building, Hotel, Warehouse, Factory Building and Public Building, also Tenement House, Lodging House or Hotel exceeding three storeys in height.

No. of Storeys	Foundation Walls									
	Stone in.	Brick in.	1st in.	2nd in.	3rd in.	4th in.	5th in.	6th in.	7th in.	8th in.
One ...	18	13	13	.	.	.	.	.	.	.
Two .....	20	17	13	13	.	.	.	.	.	.
Three .....	22	17	17	13	13	.	.	.	.	.
Four ....	24	21	17	17	13	13	.	.	.	.
Five ....	27	21	21	17	17	13	13	.	.	.
Six ....	30	25	21	21	17	17	13	13	..	..
Seven ..	35	30	25	21	21	17	17	13	13	..
Eight ..	35	30	25	25	21	21	17	17	13	13
Nine .....	38	36	30	25	25	21	21	17	17	13
Ten ....	40	35	30	25	25	25	21	21	17	13

146. WALLS EXCEEDING GIVEN HEIGHTS TO BE INCREASED IN THICKNESS. In the foregoing tables of thicknesses of walls the perpendicular distance from the top of joists in one storey to the corresponding point in the next storey is to be understood to mean not more than twelve feet in the basement or cellar, nineteen feet for the first floor, sixteen for the second storey and fifteen for all storeys above the second, except the top storey, which may have an additional five feet in height at the highest point. If any single storey exceeds three respective heights the walls of such storey and all the storeys below the same shall be increased one-half brick or about four and one-half inches more than the thickness given in the tables, and if the basement or cellar walls exceed twelve feet in height, they shall, if built of stone be increased six inches in thickness and if of brick four

and one-half inches in thickness for every additional ten feet or part thereof in excess of twelve feet.

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147 WHEN CEMENT MORTAR IS TO BE USED IN CELLAR OR BASEMENT WALLS. All basement walls built of stone or brick in buildings not more than thirty-five feet in height from the top of first floor joists to the highest point of the roof, can be built with lime mortar, but if this height of thirty-five feet between the points mentioned is exceeded these walls shall be laid in cement mortar. If solid buttresses or iron or steel columns, not over eighteen feet between centres, with sufficient strength to carry trusses or girders are used, then the thickness of the walls may be reduced one-half brick, or about four and one-half inches, provided, however, that no brick walls shall be less than thirteen inches in thickness in any hotel, office building, warehouse, factory or public building.

148 WHEN WALLS ARE TO BE INCREASED IN THICKNESS OWING TO OPENINGS. When any horizontal section of wall of a uniform thickness shows a reduction in area on account of flues, openings or recesses of more than forty per cent for the three upper storeys, or more than thirty per cent in all storeys below the third storey from the top, one-half brick shall be added to the thickness of the wall for every succeeding interval of ten per cent or part thereof reduction. If the building or any portion thereof be constructed in what is known as pier construction, the area of the pier shall be so proportioned that the maximum load on any part thereof shall not exceed the stresses given in the foregoing table, and the spandrel sections between the piers shall be one brick and one-half or thirteen inches in thickness. If the spandrel sections carry joints the loads shall be transferred to the piers on steel or reinforced concrete beams.

149 HEIGHT OF UNSUPPORTED PIER LIMITED. No isolated pier shall exceed in height seven times its least dimension.

150 THICKNESS IN TABLES TO APPLY TO ALL ENCLOSING AND BEARING WALLS. The thickness of walls specified and set forth in the tables for the various buildings, are intended to apply to all exterior enclosing walls, and

By-Law 7528 all such interior walls as may be required for the support of floors and roofs.

151 WHEN WALLS ARE TO BE INCREASED IN THICKNESS. An increase of one-half brick, of about four and one-half inches in thickness of walls, shall be made in all cases where they serve as bearing party walls.

152 AL. internal non-bearing walls of buildings may be four inches less in thickness than is specified in the tables for the different storeys, provided, however, that none are less than nine inches or one brick thick.

153. THICKNESS OF WALLS SUPPORTING TRUSSES OR GIRDERS. The outside walls, if of brickwork, of all public halls, theatres, opera houses or other buildings in which the roofs or ceilings are carried on trusses or girders of a span of fifty feet or more, shall not be of less thickness from the bottom of the first floor joists at the lowest point in the main auditorium to the underside of the trusses or girders, than the following —

(a) If the walls are over twelve feet and not over twenty-five feet in height, they are to be not less than seventeen inches thick, if more than twenty-five feet high and not more than fifty feet high, they are to be not less than twenty one inches thick for the first twenty five feet and seventeen inches for the remainder of the height.

(b) If more than fifty feet high and not more than seventy-five feet high, they shall not be less than twenty-five inches thick for the first twenty-five feet in height, twenty-one inches for the second twenty-five feet in height and seventeen inches thick for the remainder of the height. For any increase in height over seventy five feet, the thickness of the walls shall be increased in the above ratio. An increase of four and one-half inches in thickness of walls shall be made in all cases where walls are over one hundred feet long without cross walls of equal height. In all cases the foundation wall, if built of brick or concrete, to be not less than four and one-half inches thicker than the wall immediately above, and six inches thicker if built of stone.



(c) When the walls are more than twenty-five feet apart one-half brick shall be added for every succeeding interval of twelve and one-half feet, or part thereof, of distance between them, without intermediate division walls or rows of column and girder supports. By-Law  
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(d) In case there shall be one or more storeys built above a public hall, theatre or opera house, such storeys being carried on trusses or girders, the thickness of walls shall be increased by four and one-half inches or one-half brick for each two storeys or part thereof above the main auditorium of such building.

154. When wire mesh is used to reinforce brickwork, a reduction of four inches may be allowed in the thickness of wall, provided the mesh is inserted in the joints every second course, provided, however, that no wall shall be less than nine inches or one brick in thickness.

155. If solid masonry buttresses are employed and placed not more than sixteen feet apart and extending to the foot of the trusses or girders carrying the ceiling and roof, or if iron or steel columns are inserted in such walls for the support of the superstructure, and at distances not more than eighteen feet between centres, such columns extending to and carrying the superimposed trusses and girders, the thickness of such walls may be reduced in proportion to the increase of strength afforded by such buttresses or columns, but in no case shall any such wall be less than thirteen inches thick in the top storey, four and one-half inches or one-half brick being added, going downward, for each storey or for each gallery, or for each twenty-five feet in height of blank wall. If iron or steel columns are introduced in said walls the brickwork around same shall be bonded into the connecting walls, and each of such columns shall have not less than four and one-half inches of brick wall around it, the brick being measured from the extreme dimensions of such iron or steel columns.

156. If a public hall, theatre or opera house is of skeleton construction and the steel framework carries the entire superimposed load of floors, roof and walls, then the enclosing walls shall consist of thirteen inches of solid brickwork with two inches of hollow tile, or four inches of hollow brick on the in-

By Law side, properly banded together the balance of the structural  
7528 parts to be protected against the effects of fire, as required  
under Fire Proof Construction.

157 FIRESTOPS WHEN WOODEN FURRING IS TO BE USED In all brick buildings, in all walls where wooden furring is used, all the courses of brick from the under side of floor beams to the top of the same shall project a distance of at least two inches beyond the inside face of the walls, so as to provide an effective fire stop, and wherever floor beams run parallel to the wall such beams shall be kept at least two and one-half inches away from the inside line of the wall and the space between the beams and the walls shall be built up solidly with brickwork from the underside of the floor to the top of same, so as to form an effective firestop.

158. JOISTS AND BEAMS IN WALLS TO BE SEPARATED All joists, beams or other timbers in any party, fire or partition wall in any building shall be separated from the joists, beams or timbers entering the opposite side of such wall by at least nine inches of masonry work.

159 TIMBER IN WALLS PROHIBITED. No timber, except inside lintels, as hereinafter provided, or wood brick, not more than nine inches in length, shall be used in any wall of any building where stone, brick or iron is commonly used, provided, however, that the above restriction is not intended to apply to lath nailing strips being put in walls of buildings not less than eight courses of brick apart.

160 JOISTS TO BE BRIDGED All wooden floor or roof joists, except in milk construction, shall be properly bridged, and the distance between rows of bridging or between bridging and walls shall not be more than eight feet.

161 JOISTS AND BEAMS TO BE CUT ON THE SPLAY. All beams, joists or rafters which have to enter the brick or masonry walls for support shall have a bearing of at least three and one-half inches thereon, but joists shall not extend into any wall more than four inches, and the ends of all timbers shall be cut and have such splay that the upper portion shall not extend more than one inch into the wall or both

joists, rafters and timbers can be hung on stirrups if such is approved of by the Inspector of Buildings. By-Law  
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**162. WHEN STEEL OR IRON LINTELS ARE TO BE PROVIDED** All stone or brickwork over openings exceeding four feet in width shall be supported on stone, iron or steel lintels of sufficient strength to carry the superimposed weights, excepting where such stone or brickwork shall be supported with properly tied and substantial stone or brick arches. All lintels supporting stone or brickwork, over openings more than six feet in width, must bear on stone templates or iron or steel plates, the templates or plates to be of sufficient area and thickness to distribute the weight on the wall below to such an extent as to do away with any liability to crushing, and the lintels over openings less than six feet in width shall have a bearing at each end of at least six inches on the wall.

**163. WOOD LINTELS TO BE CAMBERED.** Where wood lintels are to be placed over openings not more than four feet in width, the top of the lintels shall be neatly cambered to receive the brick arch above the lintels to have a bearing at each end of one-half brick or four and one-half inches on the wall, and the depths of the lintels at the ends to be about three inches, or the height of one course of brick.

**164. RECESSES IN WALLS.** No recesses or chase for water, soil, steam or other pipes shall be made in any exterior, or in any other bearing wall, to more than one-third of its thickness, and the recesses around said pipe or pipes shall be filled up with solid masonry or plastic incombustible material after the pipes are in place for the space of one foot at the top and bottom at each storey. No recesses shall be made in any exterior or other bearing wall less than one and one-half brick thick, and no continuous vertical recess, other than fire and stacks, shall be nearer than seven feet to any other recess. No channelling shall be done in walls which are less than one and one-half brick thick, except for small gas pipes and wire conduits. Recesses for stairways or elevators may be left in the foundation or basement walls of all buildings, but in no case shall the walls be of less thickness than the walls of the fourth storey, unless reinforced by additional piers with iron or steel girders, or iron or steel columns and girders securely anchored to walls on each side. In new buildings all openings larger than four

## ERECTION AND REMOVAL OF BUILDINGS, FIRE LIMITS, ETC.

By-Law 7528 inches square, or chases deeper than four inches, shall be located on the plans and left in the walls as they are carried up. No horizontal chases or recess shall be cut in any walls.

165. HOLLOW WALLS. In all walls that are built hollow, the same quantity of stone or brick shall be used in their construction as if they were built solid, and no hollow wall shall be built unless the parts of the same are connected by proper ties either of brick, stone or metal, placed not over twenty-four inches apart. No hollow wall shall be used unless the bearing part is at least nine inches or one brick thick and the bearing portion is increased in thickness as specified in the provisions of this By-Law dealing with increase in thickness required in walls in consequence of reduction of area owing to openings, flues or recesses in same.

166. SILLS, LINTELS, ETC. All cut stone, terra cotta, artificial stone or other incombustible trim of walls, such as sills, lintels, cornice moulds, belts, etc., shall be properly anchored or tied to the backing, and no such trimming shall have less than one-half brick of full bed bearing on the walls, and all such trim shall have at least sixty five per cent of their mass laid on bearing on the wall, or shall be carried upon steel lookouts properly anchored to wall.

167. WHERE CHANGES IN THICKNESS OF WALLS ARE TO BE MADE. All changes in the thickness of walls shall be made at the top of joists, and not otherwise, and that portion of the walls above the ceiling joists shall be of the same thickness as that given for the upper storey. All interior walls supporting joists shall be carried up to and levelled off flush with the top of the said joists, unless the same are the ceiling joists and the walls shall be carried up to the top of roof joists.

168. CONSTRUCTION OF FRONT AND SIDE WALLS. In no case shall the front or side walls of a building be carried up more than five feet in advance of the other walls unless by permission of the Building Inspector, in which case approved iron anchors shall be built into all angles and joinings, and no toothing of brick will be allowed in any wall.

169. OPENINGS IN DIVISION OR PARTY WALLS. It shall be unlawful to cut or leave any opening in any division

or party walls except such openings are approved of by the Building Inspector. Every opening left in or cut through a division or party wall shall be provided with an approved fire-proof door on each side of the wall, the door to be hung on metal or metal covered frames, or on iron hinges bolted through the wall, all such doors to be self closing and held open only by a soft or fusible link which will readily burn or melt and allow the doors to close, and in no case shall any such opening exceed eight feet in width, nor ten feet in height, and above each such opening there shall be a curtain wall between the top of the opening and the ceiling of at least three feet. All such openings shall be closed at the end of each day's business and shall be kept closed until the commencement of the next business day. All such openings shall be separated by at least twenty-five feet of brick wall.

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170. WHEN BRICKS ARE TO BE WET AND QUALITY OF SAND IN MORTAR. All brick laid in non-freezing weather shall be wet immediately before being laid, the sand used for mortar in all buildings shall be clean, sharp and coarse, perfectly free from loam or other material which would have a tendency to lessen the adhesive or compressive strength of the mortar.

171. OLD BRICK PROHIBITED IN ISOLATED PIERS, ETC. No soft or salmon brick shall be used in any building where such brick will be exposed to the weather or in piers or any part of any wall where there is unusual weight or more than twenty-five feet of wall above them, and in no case shall more than fifteen per cent of salmon brick be used. No old brick shall be used in any isolated pier, buttress or pilaster, or in any external or internal bearing wall below the top storey of any hotel, warehouse, office building, factory or public building, and no chimney in any building is to be built of old brick.

172. BOND OF BRICKWORK. The brickwork in all walls, piers, buttresses or pilasters of a building shall be well bedded in mortar, laid in single courses across the walls, and be well flushed up with mortar for every course. No more than five courses of stretchers shall be laid in any part of a building without a course of headers, and the headers shall extend entirely through the wall, except where face brick is

By-Law 7528 used In one storey structures and private dwelling houses, all brickwork shall be built to a line and cornered up plumb, straight and level from the bottom to the top of the building.

173 PRESSED BRICK FACING, ETC. Pressed brick facings, except where otherwise hereinafter specified, must be bonded to the backing with galvanized metallic wall ties at least every fifth course, the ties to be placed not more than two feet apart, or ties may be used every fifth course, and a row of solid headers every ninth course, the clipping corners for blind headers being prohibited: provided, however, that in one storey structures and private dwellings a row of clipped and splayed brick every fifth course may be used as a tie for the face brickwork.

174 STONE, TILE OR TERRA COTTA FACING TO BE ANCHORED Walls may be built with a facing of stone, tile, terra cotta or other incombustible material if securely tied to a backing not less than nine inches in thickness of hard burned properly laid brick, but the thickness of the backing shall not be less than required for brick walls of the same height, if the face is less than one-half brick in thickness; all voids surrounded by terra cotta and backing shall be filled with mortar or cement.

175 NO MASONRY OR BRICKWORK SHALL BE SUPPORTED ON WOOD. No wall of brick or stone shall be supported in whole or in part by wooden posts, beams or girders.

176. BRESSUMERS. Bressumers in all cases shall be carried on brick or stone walls or piers, or on cast iron or steel columns, seated on stone or concrete, and in no case shall be carried on storey posts or other timber supports, and when the ends of any bressumers shall approach the centre line of any party wall nearer than four inches and a half, such ends shall be encased and entirely surrounded in cast iron shoes.

177 CONSTRUCTION OF BRESSUMERS. All bressumers on which a brick or stone wall is to be built shall be made of steel.

178 WHEN OLD PARTY WALLS MAY BE USED. Walls heretofore built or used as party walls, whose thickness

at the time of their erection was in accordance with the requirements of the then existing By-Laws, but which are not in accordance with the requirements of this By-Law, may, if in good condition, be used for ordinary party walls, provided the height of same is not increased and that with the proposed load placed upon them they will come within the limit of safety.

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179 BEARINGS FOR GIRDERS, TRUSSES OR POSTS. Each end of all girders, beams, trusses, posts or other supports shall rest upon a hard flat stone or iron or steel plate, of the size and thickness required in this By-Law, to distribute the weight on the walls or other support below, so that the material of which it is constructed will not be subjected to any greater stress per square foot than the safe load given for that material in the fore-going tables.

180 WALLS FOR LIGHT AND VENTILATING SHAFTS. In every building hereafter erected or altered all walls or partitions forming interior light or vent shafts shall be constructed of brick or other incombustible material except that where approved of by the Building Inspector they may be constructed of four-inch studs, filled in solid with fireproof material or plastered on both sides on metal lathing and always with masonry fire stops at each floor, and shall extend two feet above the roof. Windows and ceiling lights shall have metal frames and sash and wire glass.

Where shafts start above the first floor they shall be supported by steel or concrete beams.

Walls of dumb waiters, clothes chutes or other similar shafts shall be built as directed for light and vent shafts, and be provided with an approved metal covered door at each opening.

181 ANCHORS. The brick or stone walls of each storey above the first floor, including roof and ceiling joists, of every building shall be anchored to the joists and beams or girders with substantial wrought iron or steel anchors, which shall be solidly built into the walls from a point not more than one-half brick or four and one-half inches from the outside face of the brick or stonework, the distance between anchors, which are to be secured to joists, to be not more than eight feet, and the

By-Law 7528 ends of all joists upon which anchors are placed are to be securely strapped or otherwise fastened together, so as to form a continuous tie entirely across the building. Where posts are put in existing walls they must be thoroughly anchored in a similar manner.

182. **STONE WALLS.** All stone walls not more than twenty-four inches in thickness shall have at least one header extending through them every five feet in length of wall, and stonework when being built shall be levelled up at least every two feet in height. When the headers are to be placed in position, the headers in each alternate course shall be put midway between those in the course beneath.

183. **SIZE OF HEADERS.** All walls over twenty-four inches in thickness shall have the same number of headers as in walls of less thickness. All such headers must extend into the wall a distance of two-thirds of the thickness of such wall and be lapped with headers from the opposite side of the wall, all headers shall be not less than twelve inches in width and six inches in thickness, and all stone built into any wall shall be laid on the natural bed.

184. **CONCRETE WALLS.** The thickness of concrete walls shall depend on the quality of the material, of which the concrete is made, and the quantity of each material used in the making of it, also on the method of mixing the materials and the system of binders and anchors to be put in the wall. Samples of the material to be used in the wall shall, if required, be submitted to the Building Inspector, with the application for a permit to erect a concrete wall of any description.

185. **HOLLOW TILE AND POROUS TERRA COTTA BLOCK LINING OF WALLS.** Where hollow tile or porous terra cotta blocks are used as lining or furring for the walls, they shall not be included in the measurement of the thickness of such walls, except in certain walls not over one storey or fifteen feet in height, where the lining course is of the same dimensions as ordinary brick.

186. **HOLLOW TILE PARTITIONS.** Six (6), four (4) and three (3) inch hollow tile or burnt clay or porous terra cotta or Portland cement tile partitions may be built, not ex-



ceeding in their height a measurement of sixteen, twelve and ten feet respectively, but the same shall not exceed in length seventy five feet, unless strengthened by proper cross walls, piers or buttresses, or built in iron or steel framework. All such partitions shall be carried on proper foundations or on iron or steel girders and columns or piers of masonry

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187. PARAPET WALLS. All exterior and division and party walls over fifteen feet in height shall be carried to a height of not less than two feet above the roof.

The front and rear walls, if facing on street, alley or open space, and finished off with cornices and gutters at the roof line may have the parapet wall omitted. Where a sky-light or bulkhead of any kind in a roof is placed within five feet of a parapet wall, the said parapet wall is to be increased to a height of at least fourteen inches above the highest point of the sky-light or bulkhead for a length of twenty five per cent more than the length of the said skyhight or bulkhead. Open balustrades shall not be placed above the cornice line of any building unless they are built directly over the wall below, and of incombustible material, the top rail of any such balustrade shall not be more than eight (8) feet above the roof line.

188. DIVISION WALLS. All buildings erected in terraces or rows outside those portions of the City comprised in the First and Second Fire Limits, shall have division walls built so as to enclose two separate dwellings or other compartments and the stud partition forming the division wall between the dwellings or other compartments, shall rest upon a brick foundation wall not less than nine inches in thickness, which wall shall extend up to the top of the first floor joists, and rest upon a stone, concrete or brick footing not less than eighteen inches in width and six inches in thickness, but no openings whatever will be allowed in this wall, and it must extend from the front to the extreme rear of basement of such buildings, and be built with hard bricks. The studs forming the division walls are not to be less than two by four inches square, and be placed at not more than sixteen inches apart from centres. The studding to be lathed and plastered, the plastering to be not less than one-half inch in thickness when finished, and to extend in all places to the floor line behind all base and wainscoting.

In all places throughout the partition the spaces between

By Law the studs must be filled from the head of the partition below or at bottom of joists to a point at least six inches above the floor line, with brick, terra cotta, concrete or other incombustible material, the material to be kept in place by wood blocking, which must be securely fixed between the joists on each floor or ceiling

189 FLOOR CONSTRUCTION All buildings of ordinary construction hereafter erected more than two storeys in height, which are intended to be used for stores purposes or the storage or manufacture of merchandise, shall have an under-floor in each storey, not less than seven-eighths of an inch in thickness, and at least one thickness of not less than ten pounds to the one hundred square-feet of asbestos paper shall be laid between the boards forming the under and finished floor

190. BEAMS TO BE TRIMMED AROUND FLUES. All wooden beams shall be trimmed away from all flues in a building, the trimmer and header to be kept at least two inches from the outside face of the flue. Wooden headers and trimmers are to be of such size and strength, and are to be framed or hung in wrought iron stirrups or stud or iron joist hangers so as to fully carry the load dependent on them without straining the material beyond the limit of safety hereinbefore given.

191 IRON CAPS, ETC. Wooden posts used in mil. construction shall have cast, wrought iron or steel caps of an approved pattern, so constructed as to form a base for the next post above. The girders must be properly secured to the caps, or shall have wrought iron straps on the outside, extending from one girder to another, and the straps shall be securely belted to each girder

192 CORNICES TO BE OF INCOMBUSTIBLE MATERIAL. All exterior cornices, window sills, string courses and gutters on buildings not more than two storeys in height hereafter erected, other than private dwellings, shall be built of incombustible material, the greater weight of which, if brick, stone or terra cotta, shall be inside the outer face of the wall upon which such cornice or other projection rests. If a cornice or other projection is constructed of metal it shall be supported on and anchored to the walls with substantial wrought iron anchors and brackets, independent of any woodwork. In all

cases the walls of a building shall be carried up to the roof boarding and where a cornice projects above the roof, the wall shall be carried up to the top of the cornice. By-Law  
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**193 CORNICES OF BUILDINGS TO BE SEPARATED.** The cornice of every building shall be separated from the cornice of any adjoining building by either having party wall corbelled out a distance of two inches beyond all projections or by such other incombustible stop as may be approved by the building inspector. This section shall not be construed to prohibit the use of a wooden cornice on buildings upon which a shingle roof is allowed.

**194 UNSAFE WOOD CORNICES.** All exterior wooden cornices projecting over the street line that may now be or that may hereafter become unsafe by reason of the decay of material or be damaged by fire to the extent of one third the value thereof shall be taken down and replaced shall be constructed of solid fire-resist material, but if not damaged to such extent may be repaired with the same kind of material as that used in the original construction thereof.

**195 BAY WINDOWS AND OTHER PROJECTIONS.** No store or shop window, or bay or oriel window or other projection, except cornices over store fronts and main cornices and belt courses on any building shall project over any street line or adjacent highway. Provided however, that incombustible awnings may be erected under the owner or occupier of such building applying this application to the building inspector to the City Council for such permit. Subject however, that no permit shall be issued without the consent of the Council expressed by resolution. Upon such application the applicant shall file plans and specifications showing the necessary details of the proposed construction.

**196 REMOVAL OF AWNING.** Any permit issued in pursuance of the immediately preceding section may be cancelled at any time by the Council.

If after such cancellation such awnings are not removed within a period of ten days, or if such awnings are erected or suffered to remain without a permit, the Inspector may remove such awnings at the expense of the owner or occupier of the building upon which such awnings have been erected.

**By Law 7528 197 BUILDINGS OF SKELETON CONSTRUCTION**  
 In all buildings of skeleton construction where the walls are carried on the metal or reinforced concrete frame, the masonry walls shall not be less than twelve (12) inches in thickness. The masonry for curtain walls of skeleton construction shall be of either brick or concrete, and there shall be provided for such buildings proper and sufficient wind bracing wherever necessary. All columns shall be made of rolled steel or cast iron, and the several sections and parts thereof shall be properly riveted or bolted together at their respective junction points, and the beams and girders shall be of rolled steel riveted or bolted to such columns at all connections provided, however, that a skeleton construction may be made of reinforced concrete properly joined together at the junction points of the beams, girders and columns.

**198. FIRE-RISK CONSTRUCTION.** This type of construction shall be applied to all buildings in which all parts that carry weight or resist strains, such as stairs, and all stair and elevator enclosures are to be made entirely of incombustible material and in which all metallic structural members are to be protected by fireproof coverings.

**199.** The materials which shall compose fireproof materials for walls are:—

- (a) Brick.
- (b) Stone.
- (c) Concrete.
- (d) Terra cotta.
- (e) Hollow-burned clay tiles.
- (f) Cement block or tile.

**And for non-bearing partitions:—**

- (1) A combination of pure gypsum and fibre not less than two inches thick.
- (2) Cement plaster on metal lath applied to metal studding and with a total thickness not less than two inches.
- (3) Cement plaster on fabric, combining metal lath and metal studding and with a total thickness not less than two inches.

200. The materials and construction of fireproof covering for metallic members shall be as follows.— By Law 7528

(a) Brick not less than four (4) inches thick, outside of the extreme metal flanges and all hollow spaces behind the brick filled solid with fireproof materials. Such brick covering shall be thoroughly bonded.

(b) Hollow tile and burned clay porous terra cotta or concrete blocks not less than two (2) inches thick outside of the extreme metal flanges. All such blocks, if made hollow, shall have flanges and webs at least five-eighths ( $\frac{5}{8}$ ) inch thick, and webs not more than six (6) inches apart.

(c) All such blocks are to be applied to the metal, in a bed of cement mortar and the hollow spaces behind the blocks shall be filled solid with fireproof material.

(d) All such covering shall be firmly secured to the metal.

(e) Concrete applied directly to the metal, of the constructive members, or on metal lath, and at least one and a half ( $1\frac{1}{2}$ ) inches thick outside of the extreme metal flanges, and with hollow spaces behind the coverings filled solid with fireproof material. All such covering shall be firmly secured to the lower flanges of girder and beams by wire or metal clips.

(f) Metallic structural members, located in external walls shall be protected on the outer side by at least eight (8) inches of brick, or six (6) inches of fireproof material, or combination of any two.

(g) In skeleton construction the plates and shelves carrying walls or fireproofing may come within two (2) inches of the face of the wall.

(h) For columns entirely surrounded by fireproof blocks, these blocks shall be securely bonded with wire of not less than fourteen (14) gauge.

(i) All column coverings must extend from the constructive floor, arch or slab of a storey to the underside of the arch or slab of the storey above.

(j) There shall be no pipes, wires or conduits encased within the fireproof coverings of any columns.

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(k) The thickness of the fireproof coverings herein prescribed shall be exclusive of any plaster afterwards applied. Lath and plaster alone shall not be considered fire-proof.

(l) Gypsum blocks and tiles shall have not more than six (6) per cent by weight of fibre and webs not less than one (1) inch thick, and the mortar used shall be of the same material or of Portland cement.

201 The floor of fireproof construction shall be made of —

(a) Brick arches not less than (8) inches thick, having ample rise, well keyed and laid in cement mortar.

(b) Hollow burned clay or terra cotta or cement floor blocks not less than eight (8) inches deep, having proper skewbacks and keys, also slots to fit the metal beams. Hollow blocks shall have webs and ribs not less than five eighths ( $\frac{5}{8}$ ) inch thick. Such floor blocks shall be laid in cement mortar.

(c) Reinforced concrete made as hereinafter described in Article No. 204.

(d) Other incombustible materials which have been accepted and approved for floor construction by the National Board of Fire Underwriters and by the Inspector of Buildings.

202 Where wood floors are used over fireproof construction the entire space between the top of the floor construction and the underside of the finished floor shall be filled with concrete.

203 Ceilings in fireproof construction shall be entirely of fireproof material, and when used for ceilings only they may be of light construction but must be so constructed that they bear no weight of floors or roofs.

## REINFORCED CONCRETE CONSTRUCTION

204 PERMISSION TO ERECT Before permission to erect any reinforced concrete structure is issued, complete drawings and specifications must be filed with the Building Inspector showing all the details and the size and position of the reinforced rods, stirrups, etc., and giving the composition of

the concrete, provided, however, that permission to erect any reinforced concrete does not in any manner imply the acceptance or approval of the construction until after tests have been made of the actual construction, to the satisfaction of the Building Inspector

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**205. PROPORTION OF CONCRETE.** All concrete used in the construction of buildings shall be mixed in proper proportions not less than one part of cement, two parts of sand and four parts of clean stone or gravel, or in such other proportions as may be necessary to make the resistance of the mixture to crushing not less than two thousand four hundred pounds per square inch after hardening for twenty eight days.

**206. METHOD OF TESTING.** The tests to determine the strength of such cement must be made by a competent engineer, employed by the owner of the building, or by the contractor, and such tests as well as the preparing of the mixture for the same shall be made in the presence of and under the direction of the Building Inspector or his authorized assistants.

Reinforced concrete work entering into the construction of any building shall be made of like material and mixed in the same proportion and in the same manner as that provided in the foregoing section hereof.

**207. MIXING OF CONCRETE.** The concrete used in reinforced concrete construction must be what is usually known as a "wet" mixture and all concrete shall be thoroughly mixed by machine to an even uniform consistency.

When a section or panel of reinforced concrete or any trussed concrete member is started, it must be finished in its entirety before shutting down for any purpose which will entail a delay of more than thirty minutes' duration, and any batch or remnant of concrete which has been allowed to stand until it begins to set must be at once removed and must not be mixed and used in any portion of the work.

**208. PUTTING CONCRETE IN PLACE, ETC.** All concrete must be placed in forms in its final position as quickly as possible after being properly mixed, and particular attention must be given to the thorough puddling of concrete around all reinforcement and inside the lower flanges of all beams, so as to

By-Law 7328 make the entire mass a monolithic body entirely free from voids or unfilled portions

209. **QUALITY OF CEMENT.** Only high-grade Portland cement shall be used in reinforced concrete construction. Such cement when tested neat shall after one day in air develop a tensile strength of at least two thousand pounds per square inch and after one day in air and six days in water shall develop a tensile strength of at least five hundred pounds per square inch, and after one day in air and twenty-seven days in water shall develop a tensile strength of at least six hundred pounds per square inch. Provided always, that a copy of a statement of the result of each such test of the cement to be used in any concrete construction duly certified by a competent engineer approved by the Building Inspector shall be filed with the Building Inspector, before the said cement is used in said construction. Other tests as to fineness, consistency of volume etc. made in accordance with the method recognized standard specifications for cement," shall be furnished by the contractor when deemed necessary by the building Inspector.

210. **SAND.** The sand to be used must be clean, sharp and coarse, perfectly free from loam or dirt.

211. **CRUSHED STONE OR GRAVEL.** The stone used in the concrete shall be clean crushed stone or gravel of a size that will pass through a one-inch ring.

212. **METHOD OF REINFORCING.** All reinforcing steel shall be completely enclosed in the concrete. The thickness of concrete on the bottom of exposed side of any reinforcing steel member of a lintel beam or girder or column shall not be less than two inches and there shall not be of less thickness than one inch on the bottom of the steel in a floor slab.

213. **THICKNESS OF CONCRETE BETWEEN REINFORCEMENT RODS.** The steel in lintels, beams or girders shall be disposed so that there shall not be less than one and a half times the thickness of the steel in concrete between the different pieces of steel of which the reinforcement is composed.

214. **STRESSES.** Reinforced concrete shall be so designed that the stresses in the concrete and the steel shall not exceed the following limits:—



	Pounds per sq. inch	By-Law
Extreme fibre stress on concrete in compression		7528
1, 2, 4 max	650	
Concrete in direct compression not reinforced, 1, 2, 4 max.		
n piers under five diameters in height not to exceed	500	
Shearing stress in concrete	50	
Concrete not reinforced, 1, 3, 5 max, direct compression		
as in footings	208	
Tensile strength in steel	16,000	
Compression in steel	12,000	

215. **AGED CONCRETE.** The strength of aged concrete shall be determined by actual test to the satisfaction of the building Inspector.

216. **ADHESION OF CONCRETE TO STEEL.** The adhesion of concrete shall be assumed to be at least greater than the shearing strength of the concrete.

217. **MODULI OF ELASTICITY.** The ratio of the modulus of elasticity in concrete and steel shall be taken as one to fifteen.

218. **BENDING MOMENTS.** The following assumption shall guide in the determination of the bending moments due to the external forces. Lintels, beams and girders shall be considered as simply supported at the ends, no allowance being made for continuous construction over supports, and the bending moment for a uniformly distributed load on such member shall be taken at not less than  $\frac{WL}{8}$  where W is the uniformly distributed load in pounds and L is the span in inches. Reinforced concrete slabs shall be of a thickness of at least one-thirtieth of their span. Beams and girders shall be of a depth of at least one-fifteenth of their span. Floor plates when constructed continuous and when provided with reinforcement at top of plate over the supports, may be treated as continuous beams, and the bending moment for a uniformly distributed load, taken at not less than  $\frac{WL}{8}$ . But in the case of square floor plates, which are reinforced in both directions and supported on all sides, the bending moments may be taken at  $\frac{WL}{16}$ .

The floor plates to the extent of not more than five times the width of any member or girder, may be taken as part of that beam or girder in computing the moment of resistance.

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**219. MOMENT OF RESISTANCE.** The moment of resistance of any reinforced concrete construction under transverse loads shall be determined by formulae based on the following assumptions:—

- (a) The bond between the concrete and steel is sufficient to make the two materials act together as a homogeneous mass.
- (b) The strain in any fibre is directly proportionate to the distance of that fibre from the neutral axis.
- (c) The modulus of elasticity of the concrete remains constant within the limits of the working stresses fixed in this By-Law.
- (d) The tensile strength of the concrete shall not be considered.

**220. SHEARING STRESS AND ADHESION.** When the shearing stresses developed in any part of a reinforced concrete construction exceed the safe working strength of concrete as fixed in this By-Law, a sufficient amount of steel shall be introduced in such position that the deficiency in their resistance to shear is overcome.

When the safe limit of adhesion between the concrete and steel is exceeded provision must be made for transmitting the strength of the steel to the concrete to at least such an extent as will bring the adhesion to within the safe limit fixed in this By-Law.

**221. REINFORCED CONCRETE COLUMNS.** Reinforced Concrete Columns—Limit of Length—Per Cent of Reinforcement—Bending Moment in Columns—Tying Vertical Rods.

Reinforced concrete may be used for columns in which the concrete shall not be weaker than 1, 2, 4 mixture, and which the ratio of length to least side or diameter does not exceed twelve, but in no case shall the cross section of the column be less than sixty-four square inches. Longitudinal reinforcing rods must be tied together to effectively resist outward flexure at intervals of not more than twelve times the least diameter of rod and not more than eighteen inches. When compression rods are not required, reinforcing rods shall be used, equivalent to not less than one-half of one per cent (5) of the cross sectional area of the column, provided, however, that the total sectional area of the reinforcing steel shall not be less than one square inch

that no rod or bar be of smaller diameter or less dimensions than one-half inch. The area of the reinforcing compression rods shall be limited to three per cent of cross sectional area of the column. Vertical reinforcing rods shall extend upward or downward into the column above or below, lapping the reinforcement above or below enough to develop the stress on rod by the allowable unit for adhesion. When beams or girders are made monolithic with or rigidly attached to reinforced concrete columns, the latter shall be designed to resist a bending moment equal to the greatest possible unbalanced moment in the beams or girders at the columns in addition to the direct loads for which the columns are designed.

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222. When the reinforcement consists of vertical bars and spiral hooping the concrete may be stressed to one-fourth of its ultimate strength, provided that the amount of vertical reinforcement be not less than the amount of the spiral reinforcement, nor greater than eight per cent of the area within the hooping; that the percentage of spiral hooping be not less than one-half of one per cent, nor greater than one and one-half per cent, that the pitch of the spiral hooping be uniform and not greater nor one-tenth of the diameter of the column nor greater than three inches; that the spiral be secured to the verticals at every intersection in such a manner as to insure the maintaining of its form and position, that the verticals be spaced so that their distance apart measured on the circumference be not greater than nine inches, nor one-eighth the circumference of the column within the hooping.

In such columns the action of the hooping may be assumed to increase the resistance of the concrete equivalent to two and one-half times the amount of the spiral hooping figured as vertical reinforcement. No part of the concrete outside of the hooping shall be considered as a part of the effective column section.

223. In all cases where reinforced concrete columns rest upon girders, walls or foundations, or other piers, either wrought or cast iron or steel bearing plates or bases, must be provided. The plates or bases shall be of sufficient size to distribute the load which the column supports to such an extent that the compressive stress per square inch on the girder, wall or foundation or other pier will not be in excess of that allowed in this By-

By Law 7528 Law for masonry, brickwork or other different kinds of concrete, or if the girder, wall or foundation or other pier is constructed of material, the strength of which is not specially referred to in this By-Law the plates or bases must be of sufficient size to distribute the load to such an extent that the safe compressive strength per square inch allowed by standard engineering authorities on such material will not be exceeded. The plates or bases must also be either of sufficient thickness or be braced or webbed, so as to resist within the limit of stress allowed in this By-Law, the bending and shearing stresses to which they will be subjected by the columns and the ends of all reinforcing rods must be milled or sawn off normal to the perpendicular axis and each must have a full and perfect bearing on the plate or base.

224. TESTS TO BE MADE BY THE CONTRACTOR ON DEMAND. The contractor shall be prepared to make and shall make load tests on any portion of a reinforced concrete construction within a reasonable time after erection and as often as may be required by the Inspector. Such tests shall show that the construction will sustain a load of three times that for which it is designed without any sign of failure. No concrete work shall be done in freezing weather, except when the influence of frost can be and is entirely excluded.

#### HOLLOW CONCRETE OR CEMENT BLOCKS

225. The exterior walls of buildings may be constructed from the first floor joists up with hollow concrete or cement blocks, provided the blocks meet the requirements hereinafter specified, and that the walls are made of the same thickness as hereinafter specified in the tables for brick walls.

226. The blocks upon which the joists rest are to be solid and if special blocks are not used, joists must be hung on iron hangers, and if blocks have to be cut to allow joists to enter the wall, the spaces in the blocks between the joists shall be filled in solid with concrete of a similar description to that of which the blocks are made, and all portions of the walls, also all piers or buttresses which support beams or girders causing concentrated loads shall be solid blocks and of sufficient strength to sustain within the limit hereinafter specified the full load for which support is intended.

227 The hollow space in a block shall not exceed one third (1/3) of the superficial area, and no block shall be used which will at the age of twenty eight (28) days crush at less than one thousand (1,000) pounds per square inch of solid area and no block in a wall, pier or buttress shall be subjected to a greater stress than one hundred and fifty (150) pounds to the square inch of available section. No concrete or cement shall be used in the construction of any building until they shall have attained the age of at least three (3) weeks and all blocks shall be made with Portland cement of a similar quality in all respects to that heretofore specified for under the title of "Reinforced Concrete Construction"

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228 The manufacturer or user of any such blocks shall, before commencing the erection of a structure with them, submit a sample to the Inspector of Buildings for approval and at his own expense and under the supervision of the Inspector or his representative, have at any and all times such tests made as may be required.

229 An eight (8) inch block shall be deemed the equivalent of one (1) brick in thickness of measure, and the increment of thickness shall be not less than four (4) inches for a half a brick but no ten (10) inch block shall be substituted for a wall thirteen inches in thickness.

230 Blocks shall be laid in cement and lime mortar and be well bonded or tied together.

231 Where two or more blocks are required to attain the required thickness of wall such blocks shall be laid alternately to secure a proper bond.

## STRUCTURAL CONCRETE TILE

232 Structural concrete tile when conforming to the standard hereinafter given, may be used for walls of residences, tenement houses, lodging houses, etc. not more than three stories in height, using the same tables for thickness of walls as given for brick. Except that an eight-inch by eight inch tile, with a centre web (such webs being not less than one inch in thickness), may be used in place of a nine-inch brick wall, and a

dy Law 1201 erect the may be used in place of a thirteen-inch brick  
7028 wall.

233. Where a greater thickness of wall than thirteen inches is specified, two tiles may be used provided that a sufficient bond is given to tie the wall together.

234. Where such buildings as specified above are of greater height than three storeys, structural concrete ties may be used for the walls of the upper three storeys.

235. In all walls, the tile on which joists rest shall be filled with concrete, or else joist hangers shall be used.

236. Structural concrete ties may be used for walls of masonry stores and warehouses, and where such walls carry only the weight of the roof.

237. Structural concrete tiles for wall purposes shall be made of a mixture the proportions of which shall be not less than one part Portland cement to four parts of clean sharp sand or crushed stone and shall be made by the wet process, and shall not be used in the wall until at least three weeks old.

238. The Inspector of Buildings may at any time select tile from the stocks on hand and have same tested at the expense of the company making same.

## CAST IRON

239. CAST IRON NOT LESS THAN ONE INCH IN THICKNESS. Cast iron subject to crushing strain only, as in bearing plates, may be loaded to the extent of 16,000 pounds to the square inch of area where not less than one inch in thickness.

240. CAST IRON USED AS LINTELS, ETC. Cast iron used as lintels, brackets or corbels shall be so proportioned that the compressive strain upon it will not exceed 10,000 pounds per square inch, and that the tensile strain will not exceed 2,500 pounds per square inch of section.

241. CAST IRON FOR COLUMNS. Cast iron used for columns shall be proportioned in accordance with the following formula —

## For Round Cast Iron Columns

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$$10500 \frac{A}{L^2}$$

$$S = 1 \quad L^2$$

$$600 \frac{D^2}{L^2}$$

- S . . . . . Safe load in pounds  
 L . . . . . Length of column in inches  
 A . . . . . Section of area of column in square inches  
 D . . . . . Diameter of column in inches

## For Regular Cast Iron Columns

$$10500 \frac{A}{L^2}$$

$$S = 1 \quad L^2$$

$$800 \frac{D^2}{L^2}$$

- S . . . . . Safe load in pounds  
 L . . . . . Length of column in inches  
 A . . . . . Section of area of column in square inches  
 D . . . . . The least side of the rectangular column

242 MINIMUM DIAMETER AND THICKNESS OF CAST IRON COLUMNS, ETC. Cast iron columns shall have a diameter of not less than five inches and a thickness of metal of not less than three-quarters of an inch nor shall they have an unsupported length of more than twenty times their least lateral dimension or diameter, except when they form part of an elevator enclosure or staircase. The top and bottom flanges, seats and lugs shall be of ample strength and be reinforced by fillets and brackets and no lug bracket or flange shall be less than one inch in thickness when fully finished. The flanges of all columns shall be faced off to a true surface perpendicular to the axis of the column and where columns are used meters, one above the other their ends shall be bolted together with not less than four bolts each, not less than three-quarters of an inch in diameter. The core of a column below a joint shall not be larger at the flange than the core of the column above, the metal in the lower column shall be cast with a taper towards the end not less than six inches in length, or a joint plate may be inserted if of sufficient strength to distribute the load. All

By-Law 7138 base plates for cast iron columns shall be either turned or planed off on top so as to provide a proper bearing for the lowest column.

243. The base plates of cast iron columns shall be so proportioned as not to cause greater stresses in the materials on which they rest than those given in section

244. If the loads on columns are of such intensity that the base cannot readily be cast in the lower column, then there shall be a separate cast iron base consisting of shaft and upper and lower flanges reinforced with inverted brackets and flanges. The brackets shall be of sufficient number to properly distribute the load over the lower flange, and shall have an inclination to the vertical, of not less than forty-five degrees. The thickness of the metal shaft, not be less than one-quarter inch thicker than in the shaft of the column next above, nor in any case less than one and a quarter inches.

245. CAST IRON COLUMNS TO BE TESTED. All cast iron columns shall be thoroughly tested and inspected before being placed in position, and if the area of the cross section of a column is reduced at any point by blow holes or other imperfections to the extent of ten per cent, or if the core has shifted so that the metal is more than one-quarter of an inch thicker on one side than on the other, such column shall be condemned. Test holes shall be one-quarter of an inch in diameter, and as drilled in each column by the manufacturer one on the upper and one on the lower side of the column as cast, to enable an inspection of the thickness to be made.

Each test hole shall be located about eighteen inches from the centre of the column.

## STEEL

246. MAXIMUM FIRE STRESS. All girders and beams made of solid rolled steel shall be so proportioned that the maximum fibre strain will not exceed 16,000 pounds per square inch.

247. ROLLED STEEL BEAMS USED AS GIRDERS. Where two or more I beams are used as a girder they shall be bolted together with standard cast iron or special diaphragm separators at intervals not exceeding three feet.



All beams twelve inches and over in depth shall have at least two bolts to each separator By Law 7528

248. PLATE GIRDERS. Rivetted plate girders shall be designed and constructed of materials the strength of which are at least equal to those developed by the following formula —

$$\text{Nett flange area} = \frac{\text{Maximum bending moment in inch pounds}}{14000 \times \text{distance between centre of gravity of flange in inches}}$$

No part of the web plate shall be included in the above

The compression flange of plate girders shall be secured against buckling if its length exceeds forty times its width

If splices are used they shall be of sufficient area to fully replace the members spliced in either tension or compression

$$\text{Gross web area} = \frac{\text{Maximum vertical shear}}{9000}$$

End stiffeners shall be used in all plate girders and shall contain sufficient rivets to transmit the vertical shear from the web to the bearing

In immediate stiffeners shall be used in all girders carrying concentrated loads, they shall be placed immediately under the load and shall have sufficient strength to carry the load as a column and be connected with a sufficient number of rivets to transmit the stress on to the web plate

Intermediate stiffeners shall be used on all girders when the unsupported depth of the web plate exceeds sixty times its thickness at intervals not exceeding one hundred and twenty times the thickness of the web. The ends of all stiffeners shall be milled to fit the flanges of the girders. Rivet spacing in the flanges shall be determined from the moment diagram

There shall be sufficient number of rivets in the flange connection to the web between any two points on the same side of the point of maximum moment to take the stress due to the difference in the bending moments at these points

The length of rivets between heads shall not exceed four times the diameter

The pitch of rivet shall not be less than three diameters, and not more than four inches in end panels, nor more than six inches in every case

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249 RIVETING OF STRUCTURAL STEEL. The distance from centre of a rivet hole to the edge of the material shall not be less than—

- $\frac{5}{8}$  of an inch for  $\frac{1}{4}$  inch rivets
- $\frac{3}{4}$  of an inch for  $\frac{3}{8}$  inch rivets
- $1\frac{1}{4}$  of an inch for  $\frac{1}{2}$  inch rivets
- $1\frac{1}{2}$  of an inch for  $\frac{3}{4}$  inch rivets
- $1\frac{3}{4}$  of an inch for 1 inch rivets

Wherever possible, however, the distance shall be equal to two diameters. All rivets where practicable shall be machine driven. The rivets in connection shall be proportioned and placed to suit the stresses. The pitch of rivets shall never be less than three diameters of the rivet, nor more than six inches. In the direction of the stress it shall not exceed sixteen times the least thickness of the outside member. At right angles to the stress it shall not exceed thirty two times the least thickness of the outside member. All holes shall be punched accurately, so that upon assembling a cold rivet will enter the hole without straining the material with drifting. Occasional slight errors shall be corrected by reaming. The rivets shall fill the holes completely, the heads shall be hemispherical, and concentric with the axis of the rivet.

250. BOLTING OF STRUCTURAL STEEL. Where riveting is not made mandatory, connections may be effected by bolts. These bolts shall be of mild steel, and they shall have standard threads, shall be full and clean, the nut shall be truly concentric with the bolt, and the thread shall be of sufficient length to allow the nut to be screwed up tightly. When bolts go through bevel flanges, bevel washers to match shall be used so that head and nut of bolt are parallel.

251 FRAMING AND CONNECTING STRUCTURAL WORK. The connections of all structural steel work shall be in conformity with the practice of Carnegie, Frenton, Pass & Perroyd, Jones & Laughlin or other first class rolling mills as published in their manuals or handbooks.

All beams framed into or supported by other beams or girders shall be connected thereto by angles of a proper size and thickness and have sufficient rivets or bolts in both legs of each connecting angle to transmit the entire weight or load to the supporting beam or girder. In no case shall the shearing

or bearing value to the rivets or bolts provided for in this By-Law be exceeded. By-Law 7528

**252 STEEL TRUSSES.** Trusses shall be of such design that the stresses in each member can be calculated. All trusses shall be held rigidly in position by efficient systems of lateral and sway bracing struts being placed so that the maximum unbraced length to least radius of gyration, established in section, is not exceeded. Any member of a truss subjected to transverse stress, in addition to direct tension or compression, shall have the stresses causing each strain added to the direct stresses coming on the member and the total stresses thus formed shall in no case exceed the working stresses stated in this By-Law.

In trusses in members the actual net area only, after deducting rivet holes, one-eighth inch larger than the rivets shall be considered as resisting the stress. If tension members are made of angle irons riveted to girth one flange only, only that flange shall be considered in proportioning areas. Rivets to be proportioned as prescribed in this By-Law. No bolts shall be used in the connection of riveted trusses, excepting when riveting is impracticable, and then the holes shall be drilled or reamed.

Gussets shall be provided of sufficient thickness and size to accommodate the number of rivets necessary to make a connection when so required by the Building Inspector.

**253 STEEL COLUMNS MORE THAN 90 R IN LENGTH.** For riveted or other forms of steel columns from 90 R to 125 R in length:

$$S = 17,100 - 57 \frac{R}{L}$$

R

S Safe load in pounds per square inch

L Length of column in inches

R Least radius of gyration of column in inches

Less than 90 R in length

For riveted and other steel columns less than 90 R in length:

$$S = 12,000$$

S—Safe load in pounds per square inch

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251. RIVETED STEEL COLUMNS. The maximum load on riveted columns shall not exceed that determined by the following formula:

For riveted or riveted frame steel columns from 90 R to 125 R in length

$$S = 17100 - 57 L/R$$

S safe load in pounds per square inch

L unsupported length of column in inches

R least radius of gyration

Less than 90 R in length

$$S = 12000$$

Steel columns shall not have an unsupported length of more than forty times their least lateral dimensions nor be made of metal having a less thickness than one quarter of an inch.

252. FIRE PROOFING IRON OR STEEL COLUMNS.

All iron or steel columns under crossmembers which support any portion of the exterior or party walls of any building two storeys in height shall be increased with not less than four inches of brickwork or other fireproof masonry material, provided that this section shall be construed to include iron columns supporting the crossmembers immediately over street show windows in a store.

All iron or steel columns in any internal portion of a non-fireproof building over two storeys in height except private dwellings, shall also be increased to a thickness of at least two inches with fireproof material, which fireproofing is to extend continuously on such columns from bottom to top of the buildings, the covering of all lugs and brackets to be considered as being included in this requirement.

253. WOODEN COLUMNS. Where wooden columns or posts are used, the maximum loads to which they are to be subjected shall not exceed those determined by the following formula, S representing the maximum load —

254. FOR RECTANGULAR WOODEN COLUMNS.

A C

$$S = 1 - \frac{L^2}{250 D^2}$$

- A—Sectional area of the post in square inches By Law  
 D—Size of square post or least side rectangular post in inches 7528  
 L—Length of post in inches  
 C = 650 for hemlock  
       700 for white pine or Norway pine  
       1000 for oak  
       1100 for long leaf yellow pine (Georgia) or B.C. fir

## 258. FOR ROUND WOODEN COLUMNS.

$$S = \frac{A \cdot C}{185 D^2}$$

- A—Sectional area of the post in square inches  
 D—Diameter of post in inches  
 L—Length of post in inches  
 C— 650 for hemlock  
       700 for white or Norway pine  
       1000 for oak  
       1100 for long leaf yellow pine (Georgia) or B.C. fir

259. WOODEN BEAMS. The maximum loads to which timber used for beams or joists may be subjected shall not exceed those determined by the following formula, S representing the safe load in pounds.—

$$S = \frac{C \cdot B \cdot D^2}{L}$$

- B—Breadth of beam in inches  
 D—Depth of beam in inches  
 L—Length of beam in feet  
 C—160 for long leaf yellow pine or Douglas fir  
       120 for oak  
       100 for white pine or spruce  
       80 for hemlock

260. MATERIALS, ETC., OF BEST KIND. The constants given in all the foregoing formulae are based on the use of material and workmanship the best of their respective kinds

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### 261 FORMULA GIVEN IS FOR UNIFORM LOADS.

All formulae herein given for determining the load permitted upon beams of any kind are for beams supported at both ends and uniformly loaded over their entire length. The formulae for column loads are for columns concentrically loaded.

**262 CALCULATIONS.** The calculations for the allowance which must be made for other methods of loading shall be based upon the foregoing formulae and constants and the rules of the standard authorities of engineering practice.

**263 ECCENTRIC LOADS.** Any iron, steel or wood column or post eccentrically loaded shall have the stresses caused by such eccentricity computed, and the combined stresses resulting from such eccentricity at any part of the column, added to all other stresses at that part shall in no case exceed the allowable working stresses hereinbefore given.

**264 HOW ECCENTRIC LOAD IS TO BE CONSIDERED.** The eccentric load of a column shall be considered to be distributed equally over the entire area of that column at the point next below that which the column is securely braced laterally in the direction of the eccentricity.

**265 WIND PRESSURE.** All structures exposed to wind shall be designed to resist a horizontal wind pressure of thirty pounds for every square foot of surface thus exposed from the ground to top of same, including roof, in any direction.

In no case shall the over-turning moment due to wind pressure exceed seventy five per centum of the moment of stability of the structure.

In all structures exposed to wind, if the resisting moments of the ordinary materials of construction, such as masonry, partitions, floors and connections, are not sufficient to resist the moment of distortion due to wind pressure, taken in any direction on any part of the structure, additional bracing shall be introduced sufficient to make up in the difference in the moments.

In calculation of wind bracing, the working stresses set forth in this By Law may be increased by fifty per centum. In building under one hundred feet in height, provided the height does not exceed four times the average width of the base, the wind pressure may be disregarded.

**266 WORKING STRESSES** In addition to the working stresses already given dealing with brickwork, masonry, concrete, wood, steel and iron work, the following (except in the case of posts and columns) are to be considered the maximum stress per sq. inch of sectional area, which will be allowed on the materials mentioned. The value of other materials to be decided by actual test

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**267 COMPRESSION (DIRECT)**

Rolled steel	16,000
Cast steel	16,000
Wrought iron	12,000
Cast iron (in short blocks)	16,000
Steel pins and rivets (bearing)	18,000
Wrought iron pins and rivets (bearing)	15,000
Granite	14,000

**268 TENSIONS (DIRECT)**

Rolled steel	16,000
Cast steel	16,000
Wrought iron	12,000
Cast iron	2,500
Long leaf yellow pine	1,440
White oak	1,080
White pine	900
Spruce	900

**269 SHEAR**

Steel web plates	9,000	
Steel shop rivets and pins	9,000	
Steel field rivets	7,500	
Steel field bolts	7,000	
Wrought iron web plates	7,500	
Wrought iron shop rivets and pins	7,500	
Wrought iron field rivets ....	6,000	
Wrought iron field bolts	5,500	
Cast iron . . . . .	2,500	
	With fibre	Across fibre.
Long leaf yellow pine or Douglas fir	70	540
White oak . . . . .	70	550
White pine ...	42	312
Spruce	42	400

## By-Law 270. EXTREME FIBRE STRESS (BENDING)

7528	Rolled steel beam	16,000
	Rolled steel bolts, rivets and pins	18,000
	Riveted steel beams (not flange section)	14,000
	Rolled wrought iron beams	12,000
	Rolled wrought iron pins, rivets and bolts	15,000
	Riveted wrought iron beams (not flange section)	12,000
	Cast iron, compression side	15,000
	Cast iron, tension side	2,500
	Long leaf yellow pine	1,440
	White oak	1,080
	White pine	900
	Spruce	900
	Hemlock	850

271. WEIGHTS OF MATERIALS. For the purpose of estimating the weight upon floors, walls, piers, columns and other structures the following shall be taken as the weight of the materials —

	Pounds
Pine or hemlock (dry), per foot, board measure	2
Pine or hemlock (green), per foot, board measure	4
Yellow pine (southern), per foot, board measure	4
Yellow pine (northern), per foot, board measure	4
Brickwork (ordinary), per cubic foot	112
Brickwork (pressed), per cubic foot	140
Stonework (mortar rubbed), per cubic foot	155
Sandstone masonry (well dressed), per cubic foot	145
Granite or limestone masonry, well dressed per cubic foot	165
Slatting, per square foot	8
Tiles (plain), per square foot	15
Lath and plaster on side, per square foot	6
Four ply felt and gravel roofing, per square foot	6
All other materials as given in standard engineering books	

272. LOADS, FLOORS AND ROOFS ARE TO BE PROPORTION TO SUSTAIN. The floors of all buildings shall be designed and constructed so as to have sufficient strength, according to rules hereinbefore given, to sustain the weights to which the proposed use of the buildings will subject them and in addition to the weight of the materials of which a



When constructed provision shall be made for the live loads mentioned in the following paragraphs for the different classes of buildings for every square foot of floor surface

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(e) Dwelling house floors, fifty pounds.

(f) Hotels apartment houses, tenements and boarding schools or other buildings used as dwellings, fifty pounds in the private rooms or apartments, and seventy-five pounds in the main entrance halls.

(g) Floors in office buildings, seventy-five pounds, except halls, lobbies and other parts for common use which shall be one hundred pounds per sq. ft. except the ground floor which is to be proportioned for one hundred and twenty-five pounds.

(h) Public offices, drug stores, banks or rooms for public use, one hundred pounds.

(i) Churches, theatres, public parks and stores for light merchandise, one hundred pounds.

(j) School room floors, eighty-five pounds in rooms, and one hundred pounds in corridors and lobbies.

(k) Mills, warehouses, factories and storehouses shall be proportioned to the load they are intended to carry provided that all floors shall be constructed to support not less than one hundred and twenty-five pounds.

(l) The floors not included in this classification, and for floors subject to vibration of machinery, or those of drill rooms, dancing and riding schools, or where they will be subject to stress from moving or suddenly applied heavy loading, the Building Inspector shall determine the load they are to be proportioned for.

273. FLAT ROOFS. All new or renewed flat roofs shall be proportioned and constructed to bear safely a weight of forty pounds to the square foot, in addition to the weight of the material of which they are composed, and all roofs rising at a greater angle than twenty degrees shall be constructed to carry a weight of twenty pounds to the square foot in addition to its own weight and to resist a horizontal wind pressure of thirty pounds per square foot of roof surface.

274. MANSARD ROOFS. If a mansard or other roof of like character, having a pitch of over sixty degrees, be placed

By-Law 7528 on any building exceeding thirty five feet in height, from the sidewalk or finished grade level it shall be constructed with iron or steel rafters and the plastering on the inside wall be on iron or steel lath or if constructed with wood rafters the space between the outside sheathing and the lath must be well filled with mineral wool or other incombustible material, and the outside sheeting must be covered with metal slate or tile such covering to be put on in the manner herein prescribed in the provisions dealing with roofing. Provided, however that this section does not apply to dwelling houses or a frame building, not over forty feet in height from sidewalk or finished grade line to the highest point of the roof. Provided, further, that in this building a mansard is to be considered a full storey, and no mansard shall be constructed more than one storey in height.

275. BULKHEAD OR SCUTTLES. All buildings over two storeys in height shall have scuttles or bulkheads not less in size than twenty by thirty inches leading to the roof with proper ladders or stairs leading thereto from the floor below, and the lid cover or door of any scuttle or bulkhead shall not be fastened in such manner that it cannot be readily opened from the inner side without the use of a key nor shall the approaches thereto be fastened with other than movable bolts on the inner side. In buildings over four storeys in height the ladder or stairs shall be of iron or other incombustible material and be secured permanently in place so as to be at all times available, and the curbing and lid or cover of a scuttle hole or entire bulkhead including door and frame of same, shall be covered with iron or other incombustible material.

276. PENT HOUSES, ETC. Pent houses used as enclosures for tanks and elevators and coverings for the machinery of elevators or any other purpose whatever hereafter erected on or above the roof of the buildings shall be built of fireproof materials or covered on all sides including frames of doors and windows, with metal and the roof shall also be constructed with incombustible material. All windows in a pent house, or any projection above the flat roof, shall have metal covered sashes, and the sashes shall be glazed with heavy wire glass. Covers on top of water tanks placed on roofs may be of wood covered with sheet metal or other incombustible material. Where party or division walls form a side or sides

of a pent house they shall be carried up as fire walls at least fifteen inches above the roof of such pent house. By-Law 7528

277. WATER TANKS. Water tanks erected over roofs of buildings shall be supported on sufficient brick bearing walls or beams and columns of metal, and the erection of a water tank on any building shall not be commenced until plans and specifications of the tank and its supports have been submitted and approved of and a permit obtained to erect same from the Building Inspector. No wooden posts or beams are to be used for supporting tanks but the same including the chime posts shall be of steel. Steel chime posts to be spaced not over eighteen-inch centres.

278. SKYLIGHTS. All skylights shall be constructed wholly of noncombustible materials, and be glazed with heavy skylight glass. Skylights located at the roof of light courts or light wells shall be made of either prismatic lights in iron frames, or glass not less than one-quarter of an inch thick set in metallic frames, and the glass shall be protected from falling and as a wire netting to be rigidly supported on iron or steel slanch pins. Such netting to be made of galvanized wire not less in size than No. 8, and mesh not coarser than one and a half by one and a half inches. Skylights over floors to which the public have access shall have a wire netting similar to the above, securely fastened in a horizontal position underneath them, or such skylight shall be glazed with heavy wire glass. Photographers' skylights may be constructed without wire netting if metal and plate glass is used.

279. SNOW GUARDS. All roofs so constructed and located that the snow which lodges on them is liable to slide from said roof on to the street sidewalk or road, or into any place so as to endanger public safety shall be provided with sufficient snow guards to prevent this from taking place and if snow lodges upon any cornice, gutter or any other part of a building and is liable to slide in such quantity as to endanger the public, it shall be at once removed by the owner, agent or occupants of such building.

280. STAIRCASES. Any building over three storeys high and of an area less than 6,000 square feet, must have at least one fireproof staircase of a clear width of not less than three

By Law 7528 feet four inches, constructed as a continuous fireproof enclosure extending from the ground floor to the roof, and provided with an exit at the ground level. For buildings containing an area greater than 6,000 square feet, but not more than 12,000 square feet, one additional staircase shall be provided as herein above described. When buildings contain a greater area than 12,000 square feet, the aggregate clear width of the several stairs shall be increased six inches for each additional 1,000 square feet but a staircase shall in no case be of greater width than five feet in the clear.

Landings, passageways and doors leading to enclosures shall have in all cases a clear width equal to the width of the staircase.

In buildings of fireproof construction no portion of the building shall be of greater distance than eighty feet from the staircase.

The risers and treads of stairs shall be so arranged that the stair may provide a safe and comfortable line of travel but the run shall in no case be of greater angle than forty-five degrees. No flight of stairs shall have a vertical rise of more than twelve feet between floors or intermediate platforms. The length of a platform shall in no case be less than the width of the stair. No winders or single rises on landings shall be used. All stairs shall have at least one hand-rail.

All doors giving access to staircase enclosures must be self-closing, hung fireproof doors with a polished plate wire glass pane, and shall open into staircase enclosure with the exception of the door at the ground level which shall open out.

Staircase enclosures must be adequately lighted at all times when the building is occupied or open to the public.

281. FOR BUILDINGS ALREADY CONSTRUCTED All buildings already constructed more than two storeys high, except three-storey buildings less than two thousand five hundred square feet (2,500) in ground area, must have at least two means of exit accessible at each floor line to each room on that floor, without going through any door capable of being locked from the side nearest the exit.

282. It shall be unlawful under any circumstances to obstruct the stairs or fire-exits or approach thereto, in any

building, and no change in the position or construction shall be made until permission so to do has been obtained from the Building Inspector. By Law 7528

283 In buildings above referred to the width of the doors opening at the street level shall be at least equal to the width of stairways hereinafore specified, and such doors shall open outward and not be fastened during business hours or while such buildings are occupied.

## 284

Floor area of each floor in square feet	1st to 4th	5th to 8th	9th to 12th	13th to 16th	No. of stairways
25,000	30 ft.	27 ft.	24 ft.	21 ft.	6
20,000	25 ft.	22½ ft.	20 ft.	17½ ft.	5
15,000	20 ft.	18 ft.	16 ft.	15 ft.	4
14,000	19 ft.	17 ft.	15 ft.	13 ft.	4
13,000	18 ft.	16 ft.	14 ft.	12 ft.	4
12,000	17 ft.	15 ft.	13 ft.	12 ft.	4
11,000	16 ft.	14 ft.	12 ft.	12 ft.	4
10,000	15 ft.	13½ ft.	12 ft.	10½ ft.	3
9,000	14 ft.	12½ ft.	11 ft.	9½ ft.	3
8,000	13 ft.	11½ ft.	10 ft.	9 ft.	3
7,000	12 ft.	10½ ft.	9 ft.	8 ft.	3
6,000	11 ft.	9½ ft.	9 ft.	9 ft.	3
5,000	10 ft.	9 ft.	8 ft.	7 ft.	2
4,000	9 ft.	8 ft.	7 ft.	6 ft.	2
3,000	8 ft.	7 ft.	6 ft.	6 ft.	2
2,000	7 ft.	6 ft.	6 ft.	6 ft.	2

The aggregate width and number of stairways required for buildings of intermediate floor area not given in the above table, shall be the width and number specified therein for the nearest given floor area.

No stairway as above provided for shall be less than three feet in width.

285 Provided, however, that if any such building not herein otherwise provided for is constructed of fireproof material throughout and metal frames and sashes, glazed with wire glass, are used for all windows excepting those on the street front, and the stairs and elevators are constructed of fireproof shafts and equipped with automatic self-closing fireproof doors

By Law 7528 at each opening of such shafts and an approved sprinkler system is installed in all storeys of the building the number of stairways as a rule provided for may be diminished to one-half provided that in no case shall there be less than two stairways for each floor in such building and provided further, that if such storey or building contains to exceed ten thousand (10,000) square feet of floor area on each floor, each such stairway shall be at least five feet wide from the first to the top storey.

286. In all buildings used for the manufacture, sale or storage of merchandise the stairways shall be enclosed with partitions of fire-resisting material or dressed and matched lumber not less than two and three quarters of an inch thick, new, and the doors in such partitions shall be fire covered, or be protected by such other fireproof material as the Building Inspector may approve. In retail stores the stairways may be open but there must be constructed on each floor at either the entrance to or bottom of every such stairway a fireproof partition with doors protected as above provided so as to construct and guard the passage of fire from one storey to another. If windows or lights are put in any part of the partitions or doors above referred to the frames of such windows or lights must be of metal and be glazed with wire glass. Provided, however that the provisions of this section shall not apply to any building which is equipped throughout including stairways and well holes, with an automatic sprinkler system.

### FIRE ESCAPES

287. FIRE ESCAPES FOR BUILDINGS OF THREE OR MORE STOREYS. All buildings in the City of Winnipeg (except private dwellings, of three or more storeys in height) shall be provided with one or more metallic stairways or metallic fire escapes, extending from the ground floor to a point four feet above the eaves and above the roof and on the outer walls thereof in such a position and location that they may be easily and readily reached at all times by the persons occupying such buildings or any part thereof and must be constructed in such a place and manner as to be safe and accessible at all times. Such stairways shall in no case extend over any public street or lane in the City of Winnipeg.

288. Every such building shall contain at least one window on each storey thereof opening on the floor level of such storey.

and providing easy access to such metallic stairway, and every such window shall be constructed of metallic frame and sash be glazed with wire glass, be made to open from the inside only and shall not be kept closed by hooks but shall be fastened on the inside with simple movable bolts. Every such stairway shall contain a platform immediately adjacent to every such window.

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289 FIRE ESCAPES FOR BUILDINGS OF MORE THAN TWO STORIES. Every building used for a hotel, store, warehouse, factory, hospital, asylum or institution for the care or treatment of individuals or for any other purpose whereby one hundred or more persons are employed at any one time shall be provided with an outside metallic stairway or stairways, unless each floor compartment shall have direct access without passing through any other compartment to a least two separate flights of fireproof stairs leading to the ground, one of which is placed in front and one in the rear of the building.

290 WRITTEN NOTICE TO ERECT FIRE ESCAPES. It shall be lawful for the Building Inspector, and he may at any time by notice in writing served upon the owner, lessee or occupant, or any building require such owner, lessee or occupant or any of them to cause such metallic stairways or fire escapes to be added to placed upon or in such building within thirty days after the service of such notice and any such owner, lessee or occupant, or any of them, so served with notice as aforesaid who shall not within thirty days after the service of such notice upon any or them, add, place or cause to be placed such metallic stairway or stairways, metallic fire escapes or fire escapes or fireproof stairway upon or in such building as required under the terms of such notice, shall be subject to the penalties of this By-Law and to like penalties for each week of such neglect to comply with such notice after the expiration of the time herein limited.

291 PLANS RE FIRE ESCAPES. Plans showing the proposed location and plans and specifications for the proposed construction of all fire escapes on any building, shall be submitted to the Inspector for approval within two weeks after he has sent the notification to erect such fire escapes, provided however that no fire escape shall be erected or commenced until

**By-Law 7428** the plans therefor shall have been approved by the Inspector of Buildings, and in no case will a fire escape be permitted to extend over any street or public lane.

**202 FIRE ESCAPES TO BE KEPT IN REPAIR** All fire escapes must be kept in good repair at all times and free from snow and ice or obstructions or encumbrances of any kind whatever.

Balance weights for lower section of stairway escapes shall be locked in to prevent the falling of such weight on stairway.

**203** Nothing contained in Sections Nos. 287 to 293 inclusive shall be interpreted to give the right or privilege to any person, firm or corporation to obstruct a fire escape extending over any street, highway or lane it being the intention of this By-Law that there shall be no obstructions in any public street, highway or lane.

**204. HALLS TO BE PROPERLY LIGHTED AT NIGHT** In all hotels, tenements, factories, manufactories, workshops, schools, institutes for the care of patients, seminaries, colleges, hospitals, halls or places of amusement or other places mentioned in this By-Law, the hallways and stairways shall be properly lighted at night and at the head and foot of each flight of stairs and at the approaches to all exits there shall be kept during the night a red light unless such building is unoccupied and one or more gongs or alarms capable of being heard throughout the building shall always remain easy of access and ready for use in each of said buildings to give notice to the inmates in case of fire. Such gongs shall be electrically controlled and be operated by means of switches on each floor and in basement. There shall also be proper signs at each switch to indicate the purpose for which the said switches are intended and the manner in which they are to be operated.

On each floor proper signs, with the words "To Fire Escape" at or near the exit to said fire escape shall be placed in conspicuous places.

In place of the above-mentioned fire alarm system automatic alarms may be installed if approved of by the Building Inspector.

## ELEVATORS

**205 INSPECTION** All hoists or elevators intended to be used or in use for the transfer, carriage or elevation of goods,



wares, merchandise or passengers, and erected, constructed, built or put up, and maintained in any store, shop, warehouse, hotel or other building shall be constructed, erected and maintained kept in good order and repair to the satisfaction of the Building Inspector. By-Law  
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296. EXPERIENCE AND AGE OF ELEVATOR OPERATORS. Every passenger elevator except a private dwellings occupied by one family, must be in charge of a competent operator, of reliable and industrious habits, not less than sixteen years of age.

In case the Inspector of Buildings shall become satisfied that the person engaged in operating any elevator is incompetent or disqualified from any cause to continue to operate the same the owner or person controlling the elevator shall, upon written notice from the Building Inspector at once replace the said operator by a competent operator.

297. GRATING OR SCREENS TO BE USED. Immediately under the sheaves at the top of every elevator shaft in any building there shall be placed a substantial grating or screen of iron or steel and of such construction as shall be approved by the Building Inspector.

298. ENCLOSURE OF ELEVATOR MACHINERY. All parts of elevator machinery must be enclosed properly and such enclosure must be lighted. Free and safe access must be provided to all parts of elevator machinery.

299. LOCATION OF ELEVATORS. No elevator shall be placed in any building in such a way that any portion of the platform or hatchway of such elevator could be used as a passageway or for any other than elevator purposes.

300. CARRYING BEAMS. The carrying beams for overhead machinery of all elevators shall be iron or steel. The journal boxes shall be closed type.

301. ALTERATIONS. In making any changes or alterations to elevator shafts, rails, overhead machinery or power, all the work must be made to conform to the present law and regulations.

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302 ELEVATORS NOT TO BE USED AFTER INSPECTION HAS DECLARED THEM DANGEROUS. It shall be unlawful for the owner or agent or person in charge of any building in which there is an elevator or hoist to permit the use of the same after being notified by the Building Inspector that the same is in a dangerous condition and that same must not be used until all necessary repairs have been made.

303 ELEVATOR ENCLOSURES. In all buildings containing one or more elevator or elevators the shaft of every such elevator or elevators shall be enclosed with fireproof walls or partitions of non-combustible material, which shall be carried from story to story. All such elevators and elevator enclosures shall have approved fireproof doors, which shall be made to open from the inside only, excepting the door on the first floor of the building which shall have a lock to permit of same being opened on the outside. The roof of such elevator shaft shall be formed by a skylight and have a ventiler therein the size of which shall be at least one-twentieth of the area of the shaft. Skylights and ventilators may be omitted where there are fireproof windows in such shafts opening on a street, lane or court.

304 WRITTEN NOTICE TO ENCLOSE ELEVATOR SHAFTS. It shall be lawful for the said Building Inspector, and he may at any time by a notice in writing served upon the owner, lessee or occupant of any building require such owner, lessee or occupant or any of them to cause the elevator shaft in such building to be encased or enclosed with walls or partitions of non-combustible material and in the manner hereinbefore prescribed for enclosing elevator shafts, and if said owner, lessee or occupant of such building or any of them shall not within thirty days after the service of such notice enclose or encase the elevator shaft in the manner prescribed or required by such notice, he or they shall be subject to the penalties of this By-Law, and to like penalties for such neglect to comply with such notice after the expiration of the time herein limited.

305 NO ELEVATOR IN WELL HOLE. No elevator shall hereafter be constructed in the well hole of any stairway unless there be a fireproof partition between such elevator and such stairway extending from the basement to a point not less than three feet above the roof level.

**306. PASSENGER ELEVATORS.** In existing buildings passenger elevators enclosed in open grill work may be erected in staircase enclosures where the entire space occupied by the stairs and elevators is enclosed in walls of brick or other non-combustible material, provided that in warehouses, stores, factories and other buildings the enclosing walls shall be provided with fireproof doors or wired glass in metal frames, provided also that nothing in this section shall apply to any building other than stores, warehouses, nor to private dwellings or stores with private dwellings above the first floor.

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All elevators in departmental stores shall be enclosed in fireproof enclosures from the lowest floor to a point above the roof and all doors must be fitted with panels of wire glass.

### 307. ELEVATORS IN OTHER BUILDING HOUSES.

10. Wherever freight or passenger elevators connecting the several stories of a building used for the sale, storage or manufacture of merchandise are built within enclosing walls there shall be at every floor through which they pass automatic hatchway doors. The automatic doors shall be made so that they shall remain closed at all times, except when the elevator is passing each floor, the doors shall be opened on the underside and constructed so as to form a substantial floor surface when closed.

If the automatic doors above described are not provided, the elevator well shall be enclosed in non-combustible buildings with an exterior supporting wall of brick, tile or other non-combustible material or encased in dressed plank not less than two and three quarters inches thick extending from the foundation to a height of not less than three feet above the roof of the building, and on such elevator shafts, the plank to be used on the inside with metal, or pasteboard or metal plates fastened to metal forming strips and the inside of the shaft of all dumb elevators shall have a similar protective non-fire

**308. TOWERS OF BUILDING INSPECTOR FOR INSPECTING ELEVATORS.** The Building Inspector shall have the unrestricted use of any elevator and the services of the operator of the same for the purpose of properly inspecting such elevator at any time he may deem it necessary.

### THEATRES

**309. FRONTALS.** Every building hereafter erected or altered to be used for theatrical or operatic purposes, or for

By Law and townships for public entertainments of any kind, and every  
 7528 building where stage scenery and apparatus are employed, shall have at least one front on the public highway or street, and have such means of exit as is hereinafter provided.

310. **NO USE OF ANY BUILDING HEREAFTER ERECTED OR ALTERED TO BE USED FOR THE PURPOSES ABOVE DESIGNATED SHALL BE OCCUPIED AS A** hotel, boarding house, lodging house, factory or workshop, or for storage purposes or for any business classed as specially hazardous and in all cases where stores, offices or other rooms are built in connection with any such building, there shall be constructed walls of fireproof materials separating such stores,

offices or other rooms from the auditorium and the walls, floors, partitions and ceilings of any such stores, offices or other rooms shall be constructed of fireproof materials throughout and there shall not be provided any doors through said fire walls connecting with the said auditorium or with the corridor or passageway from the street to the said auditorium.

311. **EMERGENCY EXITS.** There shall be reserved for services as emergency exits, in addition to the main exit in front of the building an open space or a clear one on each side of the building where said building is not located on a corner lot and on the side not bordering on the street where said building is located on a corner lot said open space or spaces shall be open to the sky and shall begin on a line with or near the proscenium wall of the stage and shall extend at least throughout the length of the auditorium proper to a line with or near the wall separating the same from the lobby, foyer or vestibule. In all cases where the open space or spaces provided for do not extend to a street or public alley, a separate and distinct corridor shall be built from each such open space to a street or public alley with continuous walls, floors and ceilings of brick or other fireproof materials extending the entire length of said corridor.

312. **DIMENSIONS OF EMERGENCY EXITS.** The width of such open space or spaces and of such corridors shall not be less than seven feet in the clear and in any part thereof, where the seating capacity of the building is more than six hundred people and less than one thousand people, where the seating capacity of the building is more than one thousand

people and less than two thousand people, the said open space or spaces shall not be less than eight feet, where the seating capacity of the building is more than two thousand people, one foot shall be added to the width of each such open space and corridor for every five hundred people or part thereof in excess of two thousand. Provided, however that the open space or spaces above provided for shall not be required for the above-named building if the total seating capacity thereof is less than six hundred people and if there are provided exits to the street equal in their total width of opening to at least twenty-two inches for every one hundred people or part thereof that the building will seat, and said buildings shall be provided with such fire escapes as the Building Inspector may deem necessary for the public safety.

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313. EMERGENCY CORRIDORS. Corridors constructed as above specified shall not be less than twelve feet in height in the clear and any structure erected over or above any such corridor shall be constructed of fireproof material. No such corridor shall be used for storage or for any other purpose whatsoever except as an exit and must be kept free and clear from all obstructions during any performance or entertainment within the building.

314. EMERGENCY EXITS, STAIRWAYS AND CROSSLINGS. There shall be provided at least two emergency exits on each side of the main auditorium or ground floor, each at least five feet in width. Such exits shall be between the boxes and the foyer within plain sight of the audience in the main auditorium, and shall open into the space herein before provided for.

An emergency exit at least three feet in width shall be provided on each side of each balcony and gallery. Each such exit shall open onto an outside balcony constructed of iron at least three and one-half feet in width, and from each such balcony a separate and distinct iron stairway at least three feet in width, shall lead to the ground. Such stairway shall be constructed with a rise of not over eight and one-half inches to the step and with a tread not less than nine inches in width. The said stairway shall not land on any public street or lane, but if one or more sides of the building borders on such street or lane, the building shall be set back the width of such stairway from the

**By-Law 7528** lot line. Such stairway shall be of ample strength and shall be provided with ample handrails, and shall be subject to the provisions of this By-Law.

The emergency exits to such stairways shall be as centrally located in their respective balconies as practicable, and there shall be provided a cross-aisle at least two and one-half feet in width, extending across the full width of such gallery or balcony to such exits.

315 If any gates or doors are used to close such corridors or open spaces from the street they shall open outward and shall fit into pockets, all so arranged that the openings through said gates or doors shall equal in width the corridors or open leading thereto. Such gates or doors shall not be kept closed by hooks, but shall be fastened on the inside with simple movable bolts, and during each and every performance or entertainment in said building said gates or doors shall be kept open.

The outer side of the doors of all such exits shall be covered with fireproof material.

If any balcony or gallery seats more than eight hundred people, then there shall be constructed such additional cross-aisles, exits and stairways as the Building Inspector may deem necessary.

316. **MAIN EXITS.** Main exits from the auditorium shall be at the end of the building opposite the stage. The doors of all exits in any such building shall swing outward. No exit shall be less than five feet in width, except as herein specially provided, and there shall be provided exits at east equal in their aggregate width of opening to the aggregate width of the several aisles in such building at their widest part.

There shall be separate and distinct exits for the main floor, balcony and galleries, opening into a common lobby, or to the street, and the width of said lobby and of the exits therefrom, shall at least equal the combined widths of all stairways, corridors and passages as opening directly into such lobby.

317. **STAGE EXITS.** There shall be at least one exit on each side of the stage not less than four feet in width leading to the street or ally or to the open spaces herein provided for.

318. AISLES. All aisles on the respective floors in the auditorium, having seats on both sides of the same, shall not be less than three feet in width where they begin and shall increase in width towards the exits in the ratio of one and one-quarter inches in every five running feet. Aisles having seats on one side only shall not be less than two and one-half feet in width at their beginning and shall be increased in width the same as aisles having seats on both sides. By-Law 7528

No corridor, aisle or passageway shall be reduced in width at any place between the point of the beginning and the exit to which it leads.

There shall be provided in each floor, balcony or gallery in the aisles and at the rear of the seats sufficient space to accommodate the entire audience allowing one hundred and fifty square feet to every one hundred persons.

319. There shall be provided in all cases a fireproof door three feet in width, opening outward from the basement under the stage on to an outside stairway of fireproof construction leading to the open space herebefore provided for, or to a landing between the building and the sidewalk. If such door be on the street side of a theatre building located on a corner lot or lots and the area of each such stairway shall be protected above the ground with a strong iron railing at least three feet in height. Provided always that such stairway, platform or area shall not encroach upon the seven foot passage herebefore provided for.

320. EXTERIOR WALLS. Exterior walls of all buildings used or intended to be used as theatres, opera houses, auditoriums, or for other buildings designed for public entertainment, where stage scenery and apparatus are employed shall be built of fireproof material, and shall conform as to thickness and strength to the requirements of this By-Law.

321. INTERIOR WALLS. All interior walls and partitions shall be of fireproof materials, and their construction shall be subject to the approval of the Inspector of Buildings.

322. PROSCENIUM WALLS. A brick wall, not less than seventeen inches in thickness, and thicker where required by the Building Inspector, shall separate the auditorium from the stage and shall extend four feet at least above the stage.

35-Law 7528 roof or the auditorium. Said firewal shall be cased with stone or Portland cement. Above the proscenium opening there shall be placed an iron or steel girder, thoroughly protected with fireproof materials, said girder to be of sufficient strength and to have proper bearings to safely support the load that may be imposed thereon.

There shall not be any opening through the said firewal except the curtain openings and one other opening, two of which may be taken below the stage and to run a level with the stage line on either side of the curtain opening. Neither of the four openings above provided for shall exceed twenty-one square feet in area, and all such openings shall be provided with fireproof doors. If such material and construction and installed in such a manner that they will be self-closing. No wood or other inflammable materials shall enter into the construction of the frame around the proscenium opening and no frame shall be firmly secured to the proscenium firewal.

123. PROSCENIUM CURTAIN. The proscenium opening shall be provided with a fireproof curtain of pure asbestos, or of steel, or of a combination of steel and asbestos.

If the curtain is made of pure asbestos it shall weigh at least two and three-fourths pounds per square yard. Such curtain shall be at least twenty-four inches wider than the proscenium opening, overlapping the proscenium walls at least twelve inches at each side of the opening and to be made to slide at each end within the grooves, the end grooves to be fastened securely to the brick wall, such curtain shall be fastened at least to and bottom to an iron pipe at least one and three-fourths inches in diameter and shall be supported and operated by wire ropes passing over iron pulleys.

Whatever kind of curtain is used shall be so arranged that it can be easily operated from the fly galleries and from either side of the stage and the construction and installation of such curtain shall be subject to the approval of the Building Inspector and of the Chief of the Fire Department.

The fire roof curtain shall be raised at the commencement of each performance or entertainment and lowered at the close of the same. The footlights shall be placed at a distance of at least two feet from the said curtain at their nearest point, and the footlight trough shall be constructed subject to the approval of the Building Inspector.



**324 SKYLIGHTS OR VENTILATING SHAFTS** **By Law 7528**

**OVER STAGE.** All skylights or a ventilating shaft or shafts of an area or combined area equal to at least one-twentieth of the stage shall be installed in the roof above the stage. Every such skylight or ventilating shaft shall be attached to the roof in such a manner that in case of fire in the rear of the proscenium wall the cutting or burning of such cord would immediately cause such skylight or the damper in such shaft to close.

The method of installing and operating such skylights or ventilating shafts shall be subject to the approval of the Building Inspector.

**325 STAGE FLOOR.** All that portion of the stage floor not directly back of the curtain opening shall be of fireproof construction and may contain a heavy cover of wood on the top of said fireproof construction and that portion of the stage floor directly back of the curtain opening if not of fireproof construction, shall have a wooden floor at least three and one-half inches in thickness.

**326 FLY-GALLERIES AND RIGGING LOFT.** All structural work of the fly galleries and rigging loft shall be of iron or steel and all floors of said galleries shall be of fireproof materials throughout.

**327 STAIRS TO FLY-GALLERIES AND BASEMENT.** All stairs to fly galleries and to the basement under the stage shall be of iron or other fireproof material, and no such stairs shall be less than two feet six inches in width.

**328 DRESSING ROOMS.** The walls, floors, partitions and ceilings of all dressing rooms shall be of fireproof construction and such dressing rooms shall not communicate directly with the stage except through doors of fireproof material, and they shall also be provided with exits as prescribed under this By Law.

**329 GRADIENTS TO SIDEWALKS.** To overcome any difference in level in and between the sidewalk and said open spaces or corridors, gradients shall be employed of not over one foot in ten feet with no perpendicular rises except one step if necessary, to the sidewalk level. This provision in regard to

**By-Law 7528.** grad-ents shall also apply to stair-ways, corridors, lobbies, pas-  
sages and stairs where the use of gradients is practicable.

330. **AT DIFFERENT HEIGHT OF FLOOR ABOVE STREET.** The ground floor of the auditorium, where it con-  
nects with the lower floor shall not be at a greater height  
above or below the street level than a gradient from the street  
vestibule of one foot to ten, said street vestibule to be not more  
than one step above the grade of sidewalk at the central en-  
trance point, and in no case to be above the grade of said  
sidewalk.

331. **CONSTRUCTION FIRE-PROOF.** All materials used  
in floors, balconies, galleries, roofs, ceilings and partitions in  
such buildings, unless herein otherwise provided, shall be iron,  
steel and fire-proof materials provided that wood flooring  
boards and the necessary sleepers to which the same may be  
fastened may be used but the expression "sleepers" shall not be  
taken to mean timbers of support. Nothing herein contained  
shall exclude the use of wooden wa-scooting to a height of not  
more than six feet.

The front of each balcony or gallery shall be constructed of  
fireproof material throughout except that the coping or capping  
may be of wood.

332. **SEATS AND PLATFORMS.** All seats in the  
auditorium, except those contained in the boxes or loges and  
galleries shall not be less than thirty-two inches from back to  
back measured in a horizontal direction, and shall be firmly  
secured to the floor. No seat in the auditorium shall have more  
than six seats intervening between it and any aisle, and there  
shall be an aisle at each end of every row containing more than  
six seats.

All platforms or balconies formed to receive seats, shall not  
be more than twenty-one inches in height of rise and not less  
than thirty-two inches in width. The ascent to seats in any gal-  
lery from front to rear shall not be of a greater angle than  
forty degrees with the horizontal plane and no platform in the  
gallery formed to receive such seats shall be less than twenty-  
eight inches in width. Such platform may be of wood, placed  
on top of the fireproof construction.

All seats in galleries shall be individual seats not less than  
nineteen inches in width. The use of benches is prohibited.

**333 STAIRWAYS.** All stairways within the building shall be constructed of fireproof materials, and shall, unless otherwise provided, be at least five feet in width. By-Law 1528

In no case shall the rises of any stair used by the public exceed seven inches in height, nor shall any tread be of less width than ten and one-half inches, exclusive of the rising.

No winding stairs shall be allowed in any stairway.

There shall be at least two independent stairways with direct exterior outlets, provided for each balcony and gallery in the auditorium and they shall be located as far apart as practicable. In all cases the width of such stairways and of the passageways leading thereto shall not be less than twenty-two inches for every one hundred seats served by such stairway.

**334 STAIRWAY LANDINGS.** At every point where a straight stairway turns directly on itself a landing the full width of both flights and without steps, shall be provided.

All stairways leading to any gallery above the balcony shall be enclosed between walls of masonry.

At every point where a stairway turns at an angle, a landing at least the full width of the stairway shall be provided.

No stairway shall ascend to a greater height than eleven feet without a landing, said landing to be level and not less than four feet in length.

**335 HANDRAILS FOR STAIRWAYS.** All enclosed stairways shall have, on both sides, strong handrails firmly secured to the wall and about three inches distant therefrom, at a height of at least three feet above the stairs, but such handrails shall not be required on level platforms and landings when the length of such platforms or landings is greater than the width of the stairway or stairways with which they connect.

**336 WORKSHOPS AND PROPERTY ROOMS.** No workshop, paint room, carpenter shop, general property or storage room shall be allowed above the auditorium or stage, or under the same. Said rooms and shops may be located at the rear or side of stage if they be separated from the stage by a fireproof wall, and any opening between them and said stage shall be protected with one or more self-closing fireproof doors or doors.

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337 HEATING PLANT If a low pressure boiler is used in connection with the heating system, the plant shall be installed in a part of the building separated by a fireproof wall or walls from the main auditorium and corridors, and in all cases the heating plant shall be installed in a fireproof room, and such room shall not be located under the auditorium or corridors.

If there is in connection with the heating plant a high pressure boiler, then said heating plant shall be located in a building or room outside of the building within which such theatre, opera house or auditorium is located, and adjacent to such theatre, opera house or auditorium building, the room containing such heating plant shall be of fireproof construction.

No coal or radiator shall be placed in any aisle or passage way used by the public as an exit, where it will form an obstruction.

All supply, return or exhaust pipes shall be properly enclosed and protected where passing through floors or near woodwork.

338 FIRE PROTECTIONS Standpipes shall be provided, with hose and hose attachments, on each side of the building, and the number and location of such standpipes shall be determined by the Chief of the Fire Department.

The Chief of the Fire Department shall designate the size of all standpipes used, and the size of pipes for sprinkler system, the number of axes and hooks, not less than four of each, the number of feet of hose necessary to be provided, the manner in which the sprinkler system shall be installed, and the number of fixed extinguishers necessary and where they shall be located.

All the hose in the building shall be tested at least once a year under the direction of the Chief of the Fire Department, and water shall be run through the hose at least once a month. Any hose or any other fire apparatus or appliance which may be found defective shall be condemned by the Chief of the Fire Department, and the same shall thereupon be removed and be replaced by efficient apparatus.

One or more competent men, approved by the Chief of the Fire Department, shall be employed by the manager of each theatre building in the City to attend each performance or entertainment given in the building, and such person or persons

338. perform his or their duties under the direction of the Chief of the Fire Department. Such person or persons shall be in the building fifteen minutes before the beginning of each performance or entertainment and shall see that all fire apparatus is in proper order and that all exits are unlocked and shall remain in the building until the audience has departed from it and shall then make a thorough inspection of every part of the building.

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Such person or persons shall make a daily report to the Chief of the Fire Department, whose duty it shall be to see that the stage hands and other theatre employees are given proper fire drill.

A sprinkling system shall be installed over the stage under the roof of every building now or hereafter erected or used for theatrical or operative purposes or for public entertainments of any kind where stage scenery and apparatus are used, which said sprinkling system shall have a side connection equipped with couplings of the pattern used by the Winnipeg Fire Department and shall be installed subject to the approval of the Chief of the Fire Department.

**339. FIRE ALARM SYSTEM.** In all buildings now or hereafter erected, or used for theatrical or operative purposes or for public entertainments of any kind where stage scenery and apparatus are used there shall be installed a fire alarm system connected with the headquarters of the City Fire Alarm Telegraph and the number and the location of the boxes in such building and the manner of their installation shall be determined and approved of by the Chief of the Fire Department.

**340. LIGHTING SYSTEMS.** Every portion of the building devoted to the use and accommodation of the public and all outlets leading to the highway or street, shall be well and properly lighted during every performance or entertainment and the same shall remain lighted until the entire audience shall have left the premises.

Nothing in the foregoing paragraph is intended to prohibit temporarily shutting off the lights in the auditorium during the production of any act or scene.

All stairs, halls, corridors, passageways, lobbies and vestibules in any such building shall be lighted by electricity and such electric lighting system shall be separate and inde-

city Law 7428 dependent from the general system of lighting for the auditorium and such system shall be controlled from the foyer or box office or both and otherwise and there shall be a separate system of lighting for the exits, also controlled from the foyer or box office.

No gas or electric lights shall be inserted in any woodwork unless protected by fireproof materials.

All electric lights and wiring shall be installed in accordance with the requirements of the By-Laws of the City of Winnipeg relative thereto, and subject to the approval of the City Electrician.

41. EXITS AND RED LIGHTS. In all theatres now or hereafter erected there shall be over every exit, on the inside, the word "EXIT" in conspicuous letters not less than six inches in height and with a distinguishing letter, "A," "B," etc., and over each such exit on the inside there shall be placed a red light which shall remain lighted until the audience shall have left the premises, and no other red light shall be allowed in the auditorium. On every programme there shall be printed instruction to the audience as to the location of exits, and which exit is best available from the different sections of the house. The aisles, passageways and stairways of all buildings affected by the provisions of this By-Law, now or hereafter erected, shall be kept clear of emplacements and chairs, and shall not be obstructed in any manner and no person or persons other than employees of the theatre, shall be allowed to stand in or occupy any of the aisles, passageways or stairways of such building during an entertainment, service exhibition, lecture, concert or public performance of any kind.

42. MINOR THEATRES AND MOVING PICTURE THEATRES. No building shall be occupied for a moving picture theatre unless said building is of solid brick or fireproof construction, and that portion so occupied shall be separated from all other parts by solid walls of incombustible materials. If a stage is to be used in connection therewith, the stage shall be separated from the main auditorium by a solid wall of incombustible material, and the opening shall be protected with an asbestos or other fireproof curtain.

Every moving picture machine now or hereafter installed must be placed in an enclosure or booth made of suitable fire-

proof material be thoroughly ventilated and be large enough for the operator thereof to walk freely on either side, or back of machine. All openings into this booth must be arranged so as to be entirely closed by doors or shutters constructed of the same or equally good fire-resisting materials as the booth itself. Doors or covers must be arranged so as to be held normally closed by spring langes or gravity tracks or similar devices. Doors or covers shall be held open by a trigger, which shall be within reach of the operator and can be released by hand and shall also be arranged so that they may be released automatically. No other openings such as the vent and the entrance to the enclosure, shall open into the auditorium.

The exits, stairs and passageways shall be regulated the same as hereinbefore described.

343. **POWERS OF INSPECTION WITH REFERENCE TO THEATRES.** In all cases under the provisions of this By-Law relating to theatres, whenever it shall be necessary for the public safety to limit the number of persons who shall occupy the interior of any building as aforesaid, and if the owner or owners, lessee or manager of such building neglects or refuses to comply with any order or requirements of the Inspector of Buildings in relation thereto, the Mayor of the City of Winnipeg upon application to him by said Inspector, may cause such building to be closed for public entertainment or perform such other acts in the premises as shall prevent the improper use or occupancy of the same and the liability of accidents to the public.

## CHURCHES

344. Every church now or hereafter erected shall have the doors of all main exits from the auditorium and from assembly rooms of various kinds, arranged to swing outward.

The seats in the main auditorium of any such building shall be fastened to the floor if the seating capacity is more than three hundred persons and no seat shall have more than six seats intervening between it and the adjacent aisle allowing twenty-two inches to the seat where pews are used.

Aisles having seats on both sides shall not be less than three feet in width, and aisles having seats on one side only shall not be less than two and one-half feet in width.

By Law 7-211 Main exits shall be provided to a total width equal to twenty-two inches for every one hundred seats in the auditorium, allowing in all cases where pews are used twenty-two inches to the seat.

The main floor of any church hereafter erected seating more than five hundred people shall not be at a greater height than seven feet above the established grade of the adjoining street.

No wood work or other inflammable material shall be used in any of the walls, floor construction, structural partitions or stairways of any church hereafter erected with a seating capacity of over one thousand persons.

Where the room containing the heating plant of any church now or hereafter erected is not of fireproof construction the walls and ceiling of such room shall be protected by fireproof materials in a manner approved by the Building Inspector.

### PLACES OF PUBLIC ASSEMBLY

345. **DOORS, HALLWAYS, SEATS, ETC.** The doors of all public buildings not specially mentioned in this By-Law, already erected or hereafter built, shall open outward. The hallways, stairways, seats and aisles shall be so arranged as to facilitate egress in case of fire or accident and to afford the requisite accommodation for public protection in such case, and all aisles and passageways in such building shall be kept free from camp-stools, chairs, stools and other obstructions during the time of public assemblage.

346. **EXIT.** Every public building hereafter erected and every building hereafter used as a public building other than those specially mentioned in this By-Law shall have all exits and entrances of the full width of the passages in which they open and the passages and exits shall have an aggregate capacity in width of not less than twenty-two inches for each one hundred persons that the building is intended to accommodate but in no case shall any passage or exit be less than four feet in width.

347. **REMOVING DOORS.** The use of revolving doors for the exits of public buildings and departmental stores is prohibited, unless additional doors of sufficient width alongside of such revolving doors are provided. Such additional doors shall be kept unlocked and shall be arranged so as to open outward.



The wings of all such revolving doors shall be so arranged that by the application of a force slightly more than is necessary to revolve such door, all the wings of such doors will fold flat on each other and in an outward direction, and such wings shall be so arranged that they will readily collapse or may be removed by pressure or by some other simple mechanical device to be approved by the Building Inspector. All such revolving doors shall be constructed in such way as to afford sufficient opening for two or more persons to pass through side by side.

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348. TENEMENTS. The following sections, numbered 349 to 399 inclusive, shall apply to tenement houses as previously defined.

#### DEFINITIONS

349. A TENEMENT means a room or suite of two or more rooms, occupied or intended or designed to be occupied as a family domicile.

350. A YARD, means an open unoccupied space, on the same lot with a tenement house, between the extreme rear line of the house and rear line of the lot.

351. A LOT COURT means an open unoccupied space other than a yard on the same lot with a tenement house. A court not extending to the street, lane or yard is an inner court. A court extending to the street, lane or yard is an outer court, if such court extends to the street it is a street court, and if it extends to the lane it is a yard court. A lot line court is a court abutting upon the division line between the lot upon which a tenement house is erected and the lot adjacent thereto.

352. A SHAFT, means a space smaller than a court wholly within or bounded on three sides by a tenement house, extending from the ground or any upper floor to the sky, used exclusively to ventilate or light water closet apartments, bath rooms or pantries.

353. A PUBLIC HALL, means a hall, corridor or passageway not within an apartment.

354. STAIR HALL means and includes the stairs, stair landing and those portions of the public halls through which it

**By-Law 7528** is necessary to pass in getting from the several entrances to the top storey

353 **CORNER LOT**, means a lot situated at the junction of two streets, or of a street and public lane, not less than sixteen feet in width. Any portion of the width of such lot distant more than fifty feet from such side street or lane shall not be regarded as part of a corner lot but shall be subject to the provisions of this By-Law respecting lots other than corner lots.

356 **NEW TENEMENT HOUSE**, means a tenement house constructed, converted or altered to such use after the coming into force of this By-Law.

357 The dimensions and boundaries of each lot must be clearly marked on plans, also the measurement of all courts, yards, shafts, rooms and halls, as well as the purpose for which each room and the several portions of the building are intended to be used, also the location of fire escapes.

358 **AREA OF LOT BUILDING IS TO OCCUPY** No tenement house, alone or with other buildings, shall occupy more than eighty five per centum of the area of a corner lot, or more than ninety per centum of the area of a corner lot, if such corner lot is bounded on three sides by streets or lanes, or more than seventy five per centum of the area of any other lot, provided that in all cases, the space occupied by fire escapes constructed and erected according to this By-Law shall be deemed to be unoccupied.

359 **CERTIFIED PLAN OF LOT** At the time of applying for a permit for the erection of a tenement house the applicant shall submit a certified plan of the lot showing the dimensions of the same and the position and dimensions to be occupied by the proposed building, also the position and dimensions of any other building or buildings which may be on the lot.

360 **TENEMENT HOUSE USED IN PART FOR BUSINESS** When a tenement house is used in part for business purposes, the ground floor thereof may cover the entire area of the lot, if the whole of such floor is used for stores or salesroom purposes only, but the provisions of this By-

Law as to the percentages of the lot which may be occupied shall apply as to all other storeys above the ground floor

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361 PROVIDED FURTHER, THAT where a building occupies a corner lot and other lands immediately adjacent to a corner lot the provisions of section 355 of this By Law shall be satisfied if the percentage left vacant of the area of the whole of such corner lot and adjacent lot, taken together, be equal to the percentage of the area required to be left vacant by such section No. 355

362 WIDTH OF LOT Where, in corner lots, the two frontages are of unequal length, the lesser street frontage shall be taken as the width of the lot.

Lesser frontage alone and not one frontage shall be considered in determining such lesser frontage

363 NO EXISTING TENEMENT HOUSE TO BE ENLARGED. No existing tenement house shall hereafter be enlarged or be built upon and it is situated demolished or shall any other building be placed on such lot so that after such alteration or addition a building a proportion of the lot upon which it is situated, larger than the proportions set forth in section 358 hereof is covered with buildings provided that in case a lot triangular or irregular in shape, bounded on two or more sides by streets has a linear foot frontage exceeding one-twentieth of the area of such lot in square feet it shall not be necessary to comply with the conditions of this section as to percentage of lot to be covered

364 FIREPROOF TENEMENTS. Every tenement house hereafter erected exceeding three storeys in height above the street grade shall be of fireproof construction, and no tenement house shall be altered so as to exceed such height without being made fireproof

365 WOODEN TENEMENTS. No wooden tenement house shall hereafter be erected nor shall any wooden building be hereafter altered or converted to such use, when such buildings exceed two storeys in height exclusive of basement nor shall any wooden tenement house wider than thirty feet and deeper than sixty feet, exceeding in area 1,800 square feet, be hereafter erected unless the interior be subdivided by fire-

**By-Law 7528** proof walls. In no case shall any portion of a wall of a wooden tenement house be less than three feet of the lot line.

**366. HEIGHT OF TENEMENT HOUSES.** No tenement house shall hereafter be erected which shall exceed in height one and one-half (1½) times the width of the widest street upon which it stands. Such height shall be the perpendicular distance from the street grade to the highest point of the roof beams.

**367. BULKHEADS.** Where there are bulkheads exceeding ten feet in height or exceeding an area ten per centum of the area of the roof, the measurements shall be taken to the top of the bulkheads, but this provision shall not apply to elevations not exceeding fifteen feet in height. The measurement in all cases shall be taken through the centre of the facade of the building.

Every tenement house hereafter erected shall have in the roof a fireproof bulkhead or fireproof scuttle or the same may be covered with fireproof material. There shall be stairs or a fixed ladder leading thereto, and no scuttle or bulkhead door shall have a sliding lock, but may be fastened on the inside by means of movable bolts or hooks. Such door or roof opening shall not be less than two feet by three feet.

**368. YARD OR LAKE IN REAR.** At the rear of every lot containing a new tenement house, unless the rear of such lot abuts upon a public lane, there shall be a yard, open and unobstructed from the earth to the sky. Every part of such yard shall be directly accessible from every other part thereof, and shall in all cases separate the building on such lot by at least ten feet from the rear line of the lot at the nearest point of approach of such building to such rear line.

**369.** In the construction of every new tenement house there shall be provided and allowed an open space, being a part of said lot upon which said house is built, at least ten square feet thereof to be used for the purpose of dumping garbage, which ten or more feet shall be so situated as to be of easy access from a public lane or some other public thoroughfare and shall be open and unobstructed from the earth to the sky. Such part of such lot shall be directly accessible from every other part

thereof, so as to enable all the occupants of said tenement house to have free use thereof for the purpose of dumping garbage. By-Law  
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**370 AREA OF COURTS.** Every court of every tenement house shall be open and unobstructed at every point thereof from the bottom to the sky, excepting where fire escapes, or stairs or landings, constructed and erected in accordance with this By-Law, project not more than four feet into such courts. Where porches are constructed in courts the area of unobstructed space in such courts shall be exclusive of space occupied by stairs and porches. No rear porch shall be constructed more than eight feet in width when the construction is of combustible material and such rear porches shall be enclosed with other than incombustible materials.

### 371 AREAS AND WIDTHS OF INNER COURTS

Storeys	Least width	Area
2	7	98 square feet
3	10	200 square feet
4	13	338 square feet
5	16	512 square feet
6	19	722 square feet
7	22	968 square feet
8	25	1250 square feet
9	28	1568 square feet
10	31	1922 square feet

**372.** For Lane courts shall have areas and minimum widths in all parts not less than one-half of those specified in the above table respecting inner courts.

**373. WIDTHS OF OUTER COURTS.** Outer courts of all tenement houses hereafter erected shall have not less than the following widths in all parts:

Height of Court	Least width
2 storeys	3 feet
3 storeys	3 feet 6 inches
4 storeys	4 feet
5 storeys	6 feet
6 storeys	8 feet
7 storeys	10 feet
8 storeys	12 feet

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If the outer or lot line court has windows on opposite sides of the same, the minimum widths as given in the above table for outer courts, shall be doubled.

374. DIMENSIONS OF SHAFTS. Shafts in all tenement houses hereafter erected shall be of the following dimensions:

Height of Shaft.	Area	Least width
2 storeys	28 square feet	4 feet
3 storeys	36 square feet	4 feet 6 inches
4 storeys	40 square feet	5 feet
5 storeys	48 square feet	6 feet
6 storeys	64 square feet	7 feet
7 storeys	96 square feet	8 feet
8 storeys	126 square feet	9 feet

Any shaft used or intended to be used to light or ventilate bath rooms shall have areas and minimum widths in all parts not less than the areas and widths as set forth in the above table, such shafts shall under no circumstances be roofed or covered at the top with a roof or skylight, and every such shaft shall be provided at the bottom with an intake or duct open to the outer air of a size at least one twentieth of the area of such shaft in order to create a free circulation of air, and so arranged that it can be freely cleaned out. Where such shaft extends to the basement or ground floor the same must be paved with impervious material.

375. SHAFTS, COURTS, AREAS AND YARDS. In every tenement house hereafter erected, the bottom of all shafts, courts, areas and yards which extend to the basement for light or ventilation to living rooms must be six inches below the floor level of the part occupied or intended to be occupied. In every tenement house all shafts, courts, areas and yards should be properly graded and drained and connected with the street sewer so that all water may pass freely into it and when considered necessary by the Health Officer shall be concreted.

376. WALLS OF COURTS TO BE LIGHT IN COLOR. The walls of all yard courts, inner courts and shafts, unless of a light color brick or stone shall be thoroughly whitewashed by the owner, or shall be painted a light color by him and shall be so maintained. Such whitewash or paint shall be renewed whenever necessary as may be required by the Health Officer.

**37. REMOVING DIRTY WALL PAPER.** No wall paper shall be placed upon any wall or ceiling of any tenement house unless all wall paper shall first be removed therefrom, and the said wall or ceiling thoroughly cleansed.

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**38. AREA TO BE ENCLOSED IN BRICK WALLS.** No tenement house, except of fireproof construction, shall have an area exceeding two thousand square feet on any floor undivided by interior division walls of fireproof construction extending from the basement floor to the roof and of the same dimensions as required for walls enclosing public and stair halls in non-fireproof tenement houses covering an area of not more than five thousand square feet, where the first floor is used for business purposes the fireproof division walls may be omitted provided that the floor directly above the business premises, and the stairway leading thereto, must be constructed of fireproof materials.

**39. SIZE AND HEIGHT OF ROOMS.** In every tenement house hereafter erected or building altered to such use all rooms excepting water closets and bath room compartments shall be of the following minimum sizes:

In each compartment there shall be at least one room containing not less than one hundred and twenty (120) square feet of floor area and every other room shall contain at least seventy (70) square feet of floor area.

Every room shall have a minimum height of not less than nine (9) feet from the finished floor to the finished ceiling, except an attic room, which need be nine (9) feet high, in but one-half of its area.

The ceilings of all basement apartments shall have a minimum height of at least four and one-half feet above the surface of the street or ground outside of or adjoining the same.

Hereafter no room in the basement of any tenement house shall be occupied for living purposes without a written permit from the Health Officer and no room in the basement of any tenement house, which is not now in use as a living room, shall be converted to such use unless all the conditions of this By-Law are complied with.

**40. WINDOWS.** In every tenement house hereafter erected or building altered to such use, every room shall have

**By-Law 7528** at least one window opening directly upon a street, yard or court, except bath rooms and water closet compartments, which shall have windows opening directly upon a yard, court, street or shaft.

Where an approved mechanical system of ventilation or a constant or induced draught is installed and approved by the Health Officer the provisions to ventilate shall be omitted.

All windows shall be so located as to properly light all portions of such rooms.

No tenement house shall without the approval of the Building Inspector, be altered so that any room or public hall or stairs shall have its light or ventilation diminished in any way.

**381 AREA HEIGHT ETC, OF WINDOWS.** In every tenement house hereafter erected, or building altered to such use the total window area in each room except water closet compartments and bath room compartments shall be at least one-tenth of the superficial area of the whole room, the area of at least one window shall not be less than seven feet six inches above the floor, and the upper half of it shall be made so as to open to the full width. No such window shall be less than twelve square feet in area between the sash heads.

**382 ALCOVES AND ALCOVE ROOMS.** Every alcove in any room in a tenement house hereafter erected shall be separately lighted and ventilated, as provided in this By-Law, and no such alcove shall be less than seventy square feet in area. No part of any room in a tenement house hereafter erected shall be enclosed or subdivided at any time wholly or in part by a curtain, portiere, fixed or movable partition, or other contrivance or device unless such part of the room so enclosed or sub-divided shall contain a window as required by this By-Law and a floor area of not less than seventy square feet.

**383 STORM SASHES.** All storm sashes or double windows shall have a strong frame so arranged as to open easily and leaving a space when open of at least eighty inches square or the whole may be arranged as to swing on hinges.

**384. PUBLIC HALL TO HAVE WINDOWS.** In every tenement house hereafter erected, or building altered to such



use is arranged or intended to be occupied by more than two families on any floor or which exceeds two storeys and basement in height every public hall shall have at least one window opening directly upon the street yard or court. Such window shall be at the one end of the hall, with the plane of the window at right angles to the axis of said hall, and there shall be at least one window opening directly upon a street yard or court in every twenty feet in length or fraction thereof of said wall.

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The foregoing provision prescribing one window in every twenty feet of hallway shall not apply to that portion of the entrance hall between the entrance and the first flight of stairs provided that the entrance door contains not less than five square feet of glazed surface. Public halls in new tenement houses may contain recesses or returns within an additional window, when the length of the recess or return does not exceed twice the width thereof, but whenever the length of such recesses or returns exceed twice their width the above provision prescribing one window in every twenty feet of hallway shall apply. In any hall which is shut off or divided by a door or doors, the several portions of such hall shall be deemed separate halls within the meaning of this By-Law.

In every tenement house hereafter erected where the public hall is not provided with a window opening directly to the outer air as hereinbefore provided there shall be a stair wall not less than twelve inches wide between the rails, extending from the entrance floor to the roof and all doors leading from such public halls shall be provided with translucent glass panels of an area of not less than five square feet for each door, and also with fixed transoms or translucent glass over each door.

In every tenement house hereafter erected, or altered to such use, not at least of the windows, provided to light each public stair hall or part thereof shall be at least two feet six inches wide and five feet high, measured between the top heads.

38. SKYLIGHTS. In every tenement house there shall be in the roof directly over each stair wall a ventilating skylight provided with ridge ventilators, having a minimum opening of forty square inches, or such skylight shall be provided with fixed or movable louvers. The glazed roof of such skylight shall not be less than twenty square feet in area. In every tenement house hereafter erected, where the stairs and public

- By Law 7528 halls are not provided with windows on each floor opening directly to the outer air the skylight shall be provided with both ridge ventilators and fixed or movable sashes.

## STAIRS

386. NUMBER AND WIDTH OF STAIRS Every tenement house hereafter erected, or building converted into such use, shall have at least one flight of stairs extending from the entrance floor to the top floor and the stairs and public halls therein shall each be at least three feet wide in the clear. Every tenement house hereafter erected, or building converted to such use containing a floor area of two thousand square feet or a fractional part thereof above the entrance storey shall have an additional flight of stairs for every additional two thousand feet or fraction thereof of floor area.

### 387 STAIRS.

a) The cut of the stringers in all tenement houses shall not exceed seven and one-half inches tread. There shall be no flight of stairs of more than fifteen or less than three steps between landings.

b) LANDINGS OF STAIRS Every landing shall be at least four feet wide. When straight stairs return directly on themselves a landing of the full width of both flights without any steps, shall be provided. Stairs turning at an angle shall have a proper landing without waders introduced at the turns. No doors shall open immediately upon a flight of stairs, nor a landing, at least two feet wider than the width of the door opening shall be provided between each stairs and each door. When two stair flights permit of one main flight no waders shall be introduced and the width of the main flight shall be at least equal to the aggregate width of the two flights.

### 388 MEASUREMENT FOR WIDTH OF STAIRS

The width of all stairs shall be measured in the clear between the hand rails. No winding or circular stairs shall be permitted.

389. STAIR HALLS. In every tenement house hereafter erected or building converted to such use which does not exceed two storeys and basement in height and which are not

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occupied or intended to be occupied by more than two families in any one floor, the stair halls and public halls may be enclosed with wooden stud partitions, provided that such partitions are covered on both sides with metal lath, and provided that the space between the studs is filled in with brick to the depth of the floor beams. In every tenement house hereafter erected, or building converted to such use, which does not exceed three storeys and basement in height, and which is occupied or intended to be occupied by more than two families in any one floor, the stair halls and public halls shall be enclosed on all sides with brick walls not less than nine inches in thickness above the basement storey and thirteen inches in thickness in the basement storey.

389 FLOORS. When wood flooring is used in a fireproof tenement house the space immediately under such wood flooring and between the wood nailing strips shall be filled with cement concrete tamped into place in a plastic state or with other such firm combustible material as shall be approved by the Inspector of Buildings. Every basement of a tenement house shall have a bed of cement concrete not less than four inches in thickness, spread over its entire surface. Wood surfacing and wooden nailing strips for floors may be used in basements of tenement houses other than fireproof houses.

390 CONSTRUCTION OF PARTITIONS IN WOODEN TENEMENTS. In all wooden tenement houses hereafter erected all public hall partitions shall rest directly over each other and shall run through the wooden floor beams and rest on the plates of the partition below and shall have the studding filled in solid between the uprights to the depth of the floor beams with approved incombustible materials.

391 WATER CLOSET ACCOMMODATION. In every tenement house hereafter erected, or building converted to such use, there shall be a water closet and bath in a separate compartment within each apartment, provided that where there are apartments consisting of not more than two rooms there may be a common water closet and bath on each floor for every three rooms on such floor.

Every water closet and bath hereafter placed in any tenement house shall be placed in a compartment completely separated from every other water closet and bath, such com-

By-Law 7528 apartment shall not be less than two feet and four inches wide and shall be enclosed with plaster partitions which shall extend to the ceiling.

In tenement houses hereafter erected or buildings converted to such use such compartment shall have a window opening directly on the street, yard, court or shaft. Every such window shall be at least one foot by three feet between the stop beads, and the entire window shall be made so as to readily open. When in water such water closet and bath room compartment is located on the top floor and ventilated by a skylight over it, or is located at the bottom of a shaft or court of lawful size and is lighted and ventilated by a skylight over it at the bottom of such court or shaft, no window shall be necessary, provided that the roof of such skylight contains at least three square feet of glazed surface and is arranged so as to open readily.

Nothing in this section with regard to separation of water closet compartments from each other shall apply to a general toilet room containing several water closets, hereafter placed in a tenement house provided that such water closets are supplementary to the water closet accommodation as required by this By-Law for the use of the tenants of the said tenement house.

392. **PRIVACY.** In every apartment of three or more rooms in a tenement house hereafter erected access to every living room and bed room and to at least one water closet compartment shall be had without passing through any bed rooms.

393. **SINKS.** In every new tenement house there shall be provided a separate sink in each apartment. In all others there shall be one sink in every apartment consisting of two rooms or more, where cooking is done. But when single rooms are let there shall be one slop sink provided for each three rooms on every floor. All sinks shall be properly supplied with running water and shall be of the style provided for and installed in the manner prescribed by the Plumbing By-Law of the City. The use of water supplied taps without properly sewer connected sinks is prohibited.

394. Every water closet compartment in a tenement house shall be provided with proper means of lighting the same at night.

395. In all water closet compartments used by one or more tenants or family, the floor of such apartment shall be made waterproof with asphalt, tile, stone or some other waterproof material and such waterproofing shall extend to at least six inches above the floor so that the set floor can be washed or flushed out without leaking. No drip trays shall be permitted. In general toilet rooms the partitions between water closets and other fixtures shall not extend to within six inches of the floor.

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396. WHITEWASHING OF CELLARS. The owner of every tenement house shall cause the cellar walls and ceilings thereof to be thoroughly lime washed or painted a light color, and to be so maintained. Such whitewash or paint shall be renewed whenever necessary as required by the Health Officer.

397. BASEMENT ENTRANCE. In every tenement house hereafter erected or building converted to such use there shall be an entrance to the basement, or other lowest story, in the outside of the said building, such entrance shall be properly protected in an approved manner.

398. DRAINAGE. Before the walls of any house are carried up above the grade level, the basement shall be connected with the street sewer through drain tiles and catch basins. Weeping drains or porous tile pipe covered with at least six inches of broken stone, shall be laid around the foundations, if such drains be laid outside they shall be connected through the walls with the inside drain tiles.

Should there be no sewer on the street, or if the basement floor is below the sewer, proper provision shall be made to prevent water from accumulating in the basement in such a way as to be likely to injure the foundations or to render the occupancy of the building unsafe or insanitary.

399. FIRE ESCAPES. Every tenement house exceeding two storeys in height hereafter erected, and every building exceeding two storeys in height now in use as a tenement house which is not provided with proper and sufficient means of egress in the event of fire, and any building exceeding two storeys in height not now used, or arranged to be used, as a tenement house shall be provided with one or more fire escapes, as provided by this By Law.

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Each separate apartment in a tenement house shall have direct access without passing through any other apartment, to at least one fire escape, unless such apartment shall have direct access, without passing through any other apartment, to at least two separate flights of stairs leading to the ground, one of which is placed in front and one in the rear of the building and either one of which may be placed outside the building. In cases where there is no direct access to two flights of stairs as at aforesaid the fire escape shall consist, in place of the usual vertical ladder, of a metal stairway between the balconies of every such fire escape securely fastened to the walls of the building and not less than two feet wide and with proper hand rails. There shall also be a metal goose-neck ladder leading from the topmost balcony to and above the roof, such ladder shall be securely fastened to the wall of the building and to the roof.

Every court in which there shall be a fire escape shall have direct and unobstructed access along the surface of the ground to a street or lane, or yard opening into a street or lane without entering into a passage through or over any building unless through a fireproof passage at least four feet wide on the court or ground level.

## 400 SCHOOLS, COLLEGES AND HOSPITALS.

Every school, college, hospital, place of public resort or entertainment, or institute for the care of patients, hereafter erected, exceeding two storeys and basement in height, shall be of fireproof construction. No such building shall be altered so as to exceed such height without first being made fireproof, and no building exceeding two storeys and basement in height, not now in use as a school, college, hospital, place of public resort or entertainment, or institute for the care of patients, shall be converted to such use without being first made fireproof.

401 HOUSE MOVING. It shall be unlawful for any person or persons or corporation to move any building, buildings or structure or part or parts of a building or structure which do not comply with the requirements of the By-Laws with respect to buildings erected within the Fire Limits hereinafter set forth, from any part of the City outside of the said limit, to any part within the same, nor shall it be lawful for

the Building Inspector to grant a permit therefor unless such building or structure shall conform with such requirements. By-Law 7528

No person, except a licensed house mover, shall move any building or structure on or across any street within the limits of the City and every such house mover shall annually before engaging in such occupation obtain a license from the License Inspector of the City and no such license shall be granted until the person applying therefor shall have given a bond in the sum of \$400, with good and sufficient sureties, to be approved by the City Engineer conditional upon among other things that the said party will pay any and all damages which may happen to any tree, pavement, street or sidewalk or to any telegraph, telephone or other electric wire or pole whether the same injury be inflicted by the said party or his agents, employees or workmen, and conditional also that the said party will indemnify and keep harmless the City of Winnipeg against all liability judgments costs and expenses which may in any wise arise against the said City in consequence of the granting of any such annual license and will in all things strictly comply with the conditions of his permit.

When any licensed house mover desires to move a building or structure from one part of the City to another along or across any street or highway of the City an application shall be made for a permit therefor to the City Engineer. Such application shall identify the building or structure to be moved and shall also indicate the route to be taken.

If the place to which it is intended to move such building or structure is within the Fire Limits within which such class of building or structure may be erected a permit may be granted for removal before such permit is granted however it shall be the duty of the City Engineer to ascertain the character of the building and for the purpose of determining whether such building complies with the requirements of this by-law respecting the class of building which may be erected within the Fire Limits of the City he shall obtain from the Building Inspector a report on the building or structure intended to be moved. It shall be the duty of the Building Inspector to furnish such report as soon as possible after being requested so to do.

The Engineer shall ascertain whether any electric street railway power, telegraph or telephone company's wires, or the

## ERECTION AND REMOVAL OF BUILDINGS. FIRE LIMITS ETC.

**By-Law 7528** wires of the City may be affected by the removal of such buildings, and if it appears that they may be so affected he shall direct notice of the application for such removal, and of the time allowed for such removal to be given to such interested company or companies and to the City Electrician.

In all such cases it shall be the duty of the person obtaining such license, before commencing to move any such building or structure to notify the City Electrician and the company aforesaid of the time when he proposes to commence such removal so that the City or company, as the case may be, may have the necessary men on hand to protect, alter or remove their wires.

The City Engineer shall make an estimate of the amount necessary to recompense the City or the company or companies whose wires may be affected by such removal, for the cost of repair to such wires, and for the wages of the men necessary to accompany said building during its removal to protect such wires and in such estimate shall be included such sum as the City Engineer thinks necessary to repair injuries done to the City's pavements and also to any wires or overhead construction belonging to the City itself. In all cases the applicants shall pay not less than the sum of five dollars before obtaining their permit and any sum additional thereon which the City Engineer shall determine is necessary for the purposes aforesaid mentioned, and such sums shall be held and paid by the City to reimburse the said company and the City itself for any damage to their or its wires caused by such removal and for any expense incurred in protecting such wires against damage during such removal and any surplus after paying said amounts may be returned by the City to the person who paid the same.

No building or other structure shall be moved or across any street until a permit of the City Engineer has been issued and such permit shall not be issued until the cash deposit ascertained as aforesaid, has been made and the other conditions precedent provided for by this By-Law complied with.

No horse-mover or other person shall draw any iron, wooden or other stake or spike or anchor or other instrument into or through the pavement of any street.

No horse-mover shall leave any building in the line of wires, lamps or cables but such moving shall be continuous each day until the building is at its final destination.



No building shall be left standing so as to prevent access to any fire alarm box or to interfere with any street lamp or so as to prevent the passage of any fire engine hose reel or other fire apparatus. By-Law  
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No house mover shall break out, remove or interfere with any wire or wires, cables or appliances, the property of any company, or the City, operating any system of telegraph, telephone, electric light, electric street railway or power.

All necessary removing or cutting of wires necessitated by the removing or any building shall be done by the duly authorized workmen of the owners of such wires, and it shall be the duty of the City or company whose wires are likely to be affected by any such moving upon being duly notified or the licensee as aforesaid to have competent workmen in attendance during such moving who shall take all necessary precautions to prevent accidents or injury to the public both in the use of streets and highways or otherwise and to prevent any damage to any building other than the building being removed.

### BILL BOARDS

402. It shall be unlawful for any person to erect any bill board, hoarding or advertising sign or increase the height of any fence or front of any building already erected for the purpose of placing advertising or posting of bills thereon to a height greater than six feet where said fence or building fronts or abuts on the street.

**BILL BOARDS, ADVERTISING SIGNS, ETC. OF A GREATER HEIGHT THAN SIX FEET.** Every bill board, hoarding or advertising sign or bulletin board of a greater height than six feet shall be set back on the lot or building upon which it is located a distance equal to the vertical height of such board, hoarding or sign.

**TO BE THREE FEET FROM GROUND UNLESS ATTACHED TO SIDE OF BUILDING.** Every bill board, hoarding, bulletin board and sign shall be set up so that the bottom thereof shall be not less than three feet above the ground unless the same is immediately attached to the wall of a building.

**ALL BILL BOARDS, ETC. TO COMPLY WITH THE PROVISION OF TWO PRECEDING SECTIONS.** Every

**By-Law 7-28** bill, board, bulletin board, hoarding or advertising sign heretofore erected which does not comply with the foregoing provisions hereof shall be altered or re-erected so as to comply with such provisions, and in default of the same being altered or re-erected as aforesaid, the same shall be immediately torn down or removed. In the event of any person, firm or corporation refusing or neglecting to remove or tear down any such bill board, bulletin board, hoarding or advertising sign owned by him or them which does not comply with the foregoing provisions hereof, the City may remove the same at the expense of such person, firm or corporation, and the City may thereupon recover the cost of such removal from such person, firm or corporation, in addition to any other penalty to which such person, firm or corporation may be liable for breach of the provisions hereof.

#### 403. INSPECTION OF STANDS FOR OBSERVATION

Any person intending to erect any grand stand, or observation stand for the use of the public, either of a temporary or permanent nature, shall before erecting the same, submit the plans therefor to the Building Inspector for his approval, and a permit for the same must be obtained. Before being used, such stand must be examined by the Building Inspector and a certificate issued by him stating that the same is satisfactory.

#### 404. ERECTION OF ARCHES ON PUBLIC STREETS

**SQUARES.** All arches or similar structures erected on any public street or square must be inspected by the Building Inspector before being used, and his certificate obtained.

### CHIMNEYS

**405. THICKNESS OF WALLS AND HEIGHT ABOVE ROOF.** No brick chimney shall be built with walls less than one-half brick, or four and one-half inches thick, nor shall the top of any chimney be lower than four feet above the top of the roof at the point of contact, if a flat roof, or at least two feet above the ridge of a pitched roof, and in no case shall a smoke flue be less than nine inches square inside.

**406. TIMBERS NOT TO REST ON CHIMNEY WALLS.** No joists or timbers of any kind are to rest upon the walls surrounding any chimney, and all such joists or tim-

bers shall be kept at least two inches distant from the outer face of the same. Provided that corbelled fire steps shall be used between the chimney and joists as in the case of walls.

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407 CHIMNEYS TO BE BONDED TO WALLS. All chimneys constructed in brick walls shall be bonded to the walls every fifth course from the bottom to the top, and all brick flues shall be built of hard burned brick and shall have struck joints or be parged on the inside, unless lined with iron or tile.

408. DISTANCE OF FLUE FROM THE CENTRE LINE OF PARTY WALLS. All flues in party walls must be located at least four and one-half inches or one-half brick from the centre line of said walls.

409 WALLS OF FLUES ARE TO BE INCREASED IN THICKNESS. If the area of a flue exceeds one hundred and twenty six square inches or if the height of the chimney is over forty feet from the first floor joists to the top of the stack, the walls surrounding the flue must be increased to at least nine inches or one brick in thickness.

410 CHIMNEY NOT TO BE SUPPORTED ON WOODEN BRACKETS. No chimney in any brick building shall be built up on any floor or beams of wood, but chimneys in wooden buildings which are not built from the ground, may be supported upon wooden brackets if the brick work is not over twelve feet in height.

411 CORBELLING OUT FOR CHIMNEYS. In no case shall a chimney be corbelled out more than nine inches from the wall, and in every case the corbelling shall consist of at least five courses of brick provided, however that no corbelling more than four and one-half inches from the face of the wall shall be allowed in a one-brick or nine-inch wall.

412 AREAS OF CHIMNEYS AND HOW TO BE CONSTRUCTED. All chimneys having a greater flue area than three hundred and twenty-four square inches, but not more than seven hundred and twenty nine square inches, shall be lined on the inside with fire brick and in fire clay, which lining shall start at least two feet below the smoke inlet and extend at

**By-Law 7528** least twelve feet above said smoke inlet. All flues having an area of more than seven hundred and twenty-one square inches, but not more than twelve hundred and ninety-six square inches shall be lined as aforesaid, a height of twenty feet above the smoke inlet. All flues having a greater area than twelve hundred and ninety-six square inches shall be lined as aforesaid, a height of at least thirty feet above the smoke inlet.

**413. WHEN FLUES SHALL HAVE HOLLOW WALLS.** Smoke flues of a greater area than seven hundred and twenty-one square inches shall have hollow walls spaced four inches apart. The brickwork of such walls taken together and including the fire-brick lining, shall be seventeen inches in thickness.

At a height of fifty feet above the smoke inlet the thickness of such surrounding brick walls may be reduced to thirteen inches, but in all cases the surrounding wall of chimneys of any size whatever shall be so proportioned that the brickwork in the same will not be subjected to a greater stress than the maximum safe stress for brickwork, provided for in this By-Law.

**414. HEIGHT OF FLUES.** All chimneys having a greater flue area than one hundred and ninety-six square inches shall extend to a height of at least twelve feet above the top of the highest roof with a radius of sixty feet therefrom to such a further height as may be necessary to afford reasonable protection from smoke and gases to buildings within the above-mentioned radius.

**415. ISOLATED CHIMNEYS.** All isolated chimneys shall have hollow walls, and shall be so designed and constructed that the stress upon any part thereof due from the weight of the stack itself and from wind pressure, shall never exceed the limits provided in this By-Law as the maximum safe stress for brickwork. Every such chimney shall be provided with an iron ladder either on the inside or outside extending from top to bottom of such chimney.

**416. FOUNDATIONS OF CHIMNEYS.** The foundations of every chimney, whether inside or outside of a building and whether such chimney is connected with such building or

isolated, shall be designed and built in conformity with the provisions of this By Law relative to foundations of buildings. Every chimney shall be provided with a cleaning-out door at the bottom, all bricks used in the construction of chimneys having an area of more than one hundred and ninety six square inches, except the fire brick linings already referred to, shall be the best assorted hard brick and shall be laid in cement mortar and the openings for smoke stacks from boilers shall be arched over and lined around with fire bricks laid in fire clay.

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417 Every metallic chimney or smoke pipe used in any building in such a way as to pass through the floors or roof of the same shall be enclosed in brick or tile walls, with an air space of at least three inches between the enclosing walls and the smoke pipe from the bottom to top. All outside metallic smoke stacks shall be thoroughly anchored and grouted.

418 SMOKE PIPE TO BE SURROUNDED WITH INCOMBUSTIBLE MATERIAL. Smoke pipes of not more than seven inches in diameter passing through wood or plastered stud partitions or a wider floor, shall be surrounded by a bed of brick hollow tile, or of terra cotta or other incombustible material measuring at least four inches in thickness all around such smoke pipe.

In cases where such smoke pipes are over seven inches in diameter they shall be surrounded with similar non-combustible material which shall at no point around such smoke pipe be less than eight inches in thickness. Smoke pipes having a diameter ranging from eight to twelve inches inclusive shall be kept at least twelve inches distant from any woodwork, and any woodwork immediately over and not more than twelve inches away from such smoke pipe must be covered with sheet metal or with porous terra cotta, hollow tile or plaster on metallic lath for a distance of two feet on each side of such smoke pipe.

Smoke pipes of greater diameter than twelve inches and less area than six square feet must be kept at least twenty-four inches away from any woodwork, and such woodwork must be protected as specified in the preceding paragraph for similar smoke pipe to a distance of four feet on each side of such smoke pipe.

Whenever smoke pipes of a larger area than six square feet are used they shall be kept at least three feet distant from

By-Law 7528 any woodwork, and such woodwork, for at least a distance of six feet on either side of said smoke pipe, shall be protected as before specified for smaller pipes.

419. CUPOLAS OF FOUNDRIES. Cupolas of foundries shall extend at least ten feet above the highest point of the highest roof within a radius of sixty feet of such cupolas, and shall be covered on top with a heavy wire netting. No woodwork shall be placed within a radius of two feet of such cupola.

420. CHIMNEY IN LOFTS. No chimney shall commence in any loft unless there are fixed stairs leading to the same, easy of access at all times, and no stove pipe shall pass through more than two ceilings before entering any chimney.

421. HEARTHES AND FIREPLACES. The hearths of all fireplaces in buildings shall be supported on trimmer arches of brick, concrete or terra cotta, such arches to be not less than four inches thick, and having the crown of the arch not less than two inches below the level of the floor, or the hearths of such fireplaces may be supported on iron bars placed between and firmly secured to the wood floor joists and trimmers, the top of such bars to be not less than six inches below the level of the floor. Not less than two courses of brick or terra cotta or concrete shall be laid in mortar or on top of such bars, and the joists in the same shall be thoroughly flushed with mortar or cement.

422. DIMENSIONS OF HEARTHES, TRIMMER ARCHES, ETC. All hearths and trimmer arches or brick foundations for hearths or fireplaces shall extend for a distance of twelve inches on each side of the fireplace opening, and shall be at least eighteen inches wide in front of the chimney break.

423. THICKNESS OF JAMBS AND BACKS OF FIREPLACES. The brickwork of the jambs and backs of all fireplaces, whether intended to burn coal, wood or gas as fuel, shall be at least nine inches thick. The brickwork over the fireplace opening shall be arched, or may be supported on a camber iron bar. Fireplace openings that are not used, but which have smoke pipes entering into flues of same above the fireplace opening, must be closed by means of an iron damper in the

throat of the fireplace opening, and such damper shall be securely fixed. By-Law  
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424 FLUES FROM FIREPLACES IN WHICH GAS ONLY IS USED. The flue from a fireplace in which gas is only used as fuel, may be of cast or galvanized iron or fire clay pipe, not less than four inches internal diameter, and such pipe shall be carried out to a point above the roof, and shall be encased in masonry not less than four inches thick. If this pipe is not embedded as specified, then the pipe must be properly encased with asbestos.

425 USE OF GAS STOVES. All gas stoves, whether used for cooking or heating, shall be provided with metal hoods or pipe for carrying off the products of combustion, and the doors of cooking and the ventilating pipe of such gas fixtures shall be connected either into ordinary chimneys or into flues as above described.

#### BOILERS, ENGINES AND FURNACES

426 HIGH PRESSURE BOILERS. Any person wishing to erect or use a building or premises wherein it is intended to install or use a high pressure boiler, steam engine or gasoline or gas engine, for any purpose whatsoever, shall make application in writing through the Inspector of Buildings to the Council, for permission to do so. Such application shall state the purpose for which such boiler or engine is intended to be used, and shall contain a description of the building or premises wherein such boiler or engine is to be used and shall, in addition, state the amount of power which is intended to be used on said premises.

No person shall, without leave of the Council, expressed by resolution, set up or work any such boiler, steam, gas or gasoline engine within the City.

427 PORTABLE ENGINES. Portable engines, used for building purposes or otherwise, shall use coke for fuel, and the work shall be done under the supervision and to the satisfaction of the Inspector of Buildings. If it is necessary to place an engine on the street or lane for building purposes, a permit must be first obtained from the City Council.

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#### 428. HEATING APPARATUS TO BE ENCLOSED

Any heating apparatus, except in private dwellings, which may be required for heating or other purposes shall be enclosed by walls of fireproof material on all sides. All doorways in said walls shall be made fireproof and also the floor and ceiling of such enclosure.

#### 429. WOODWORK, ETC. OF BOILER HOUSES

The woodwork of all boiler houses and boiler rooms, where steam pressure is used for power purposes, shall be kept at least six feet from the boiler and four feet from the breaching or smoke conductors, and one foot from the dome of the boiler, unless such woodwork is properly protected with incombustible material and then there shall be at least two feet space between the boiler or smoke pipe and such protection. No timber shall be laid within two feet space from the boiler or smoke pipe and the protection. No timber shall be laid within two feet of the inside of any oven, water furnace or within nine inches of the opening of any chimney or within nine inches of the inside of any flue.

430. PROTECTION OF FLOORS AROUND BOILERS, ETC. Whenever boilers, or other structures in which fires are maintained, are set inside of a building or in a room with wooden floor or ceiling construction, the floor of the same shall be protected by a covering of brick or concrete not less than four inches thick set in mortar upon a continuous sheet metal bearing plate not less than three sixteenths of an inch thick, all the joints of which are to be securely riveted, and the edges of which are to be turned up four inches all round.

This foundation of sheet metal and brick or concrete shall extend under the whole of the firebox and ashpit of the boiler or other structure, and to a distance of not less than six feet in front and at least three feet on the sides of same.

431. SPACE BETWEEN TOP OF BOILER AND WOOD CEILING. The spaces between the tops of such boilers or furnaces and any wood ceiling construction shall in no case be less than three feet and the underside of such wood ceiling construction shall, in all cases, be protected either by two consecutive coatings of plastering or metallic lath or wire netting, which shall be kept at least two inches distant from each other, and which metallic lath or wire netting shall be applied



by means of metal furring strips, or this protection of the wood-work shall be made by a covering of at least two inches of porous terra cotta plastered on the underside, or by a covering of hollow tile with two air spaces at least one-half inch each between the wood and the under surface thereof, which under surface shall be covered with a heavy coat of plaster.

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432. **CORRKING OF HEATING STOVES, FURNACES AND STEAM PIPES.** Cooking or heating stoves and furnaces and steam pipes shall be kept at least twelve inches clear of all woodwork, unless the woodwork is protected by bright metal sheeting. In no case shall the distance between protected woodwork be less than six inches from such stove surface or steam pipe. Every stove resting on a wood floor shall have underneath such stove a metal plate placed to protect said floor.

433. **PIPE FOR DISTRIBUTION OF HOT AIR.** Where pipes are used for the distribution of hot air in buildings such pipes must be made of metal and double the space between the two metal pipes to be at least one-half inch; such pipes shall either be made with a tight joints and be securely fastened to the partitions through which they pass or be covered with asbestos paper weighing not less than fourteen pounds per one hundred square feet.

434. **OPENINGS IN FLOORS FOR HOT AIR REGISTERS.** The openings in floors for hot air registers shall be surrounded with borders of incombustible material not less than two inches wide, firmly and securely set in place. The register pipes shall be either double having a space between the two thicknesses of ten, or at least one inch, or angle with a covering of asbestos paper, in a similar manner to that specified in the preceding paragraph for the covering of pipes.

435. **MATERIAL AND CONSTRUCTION OF DUCTS, PIPES AND REGISTERS.** Where the hot air conveyed through pipes is heated in an ordinary hot air furnace, or by any other method in which the air is heated directly in the fire box, the material used for the ducts, pipes and register boxes shall be bright iron, and the joints shall be double seamed but not soldered where the air is heated by contact with hot water or steam pipes, any other sheet metal may be used for the pipes and boxes.

**By-Law 7528.** 436. **INSPECTION OF BOILER OR FURNACE.** In no case shall any boiler or furnace be used until the same shall have been inspected and approved by the Building Inspector.

437. **INFLAMMABLE SUBSTANCES.** No person shall keep any larger quantity than five barrels of rock oil, coal oil, carbon oil, water oil or any other such oil, or one barrel of benzene or gasoline at any one time in any house, shop or building or in any other place whatsoever within the limits of the said City of Winnipeg, without the permission of the City Council or the City of Winnipeg; but nothing in this section contained shall apply or be deemed to apply to the keeping of gasoline in any public garage or private garage.

438. No explosive or inflammable compound or combustible material shall be stored or placed under any stairway of any building or wall in such manner as to obstruct or render egress dangerous and hazardous in case of fire.

439. All buildings in the said City of Winnipeg, used or to be used for the purpose of storing rock oil, coal oil, water oil, gasoline, kerosene, carbide or other such oils or combustible substances, shall be isolated or detached at least two hundred feet from any other building and where such buildings are used for the storing of burning fluids, crude oil, naphtha, benzol, benzene or other similar dangerous materials all such buildings shall be constructed fireproof and so as to secure a thorough ventilation thereof at all times, but the provisions of this section shall not apply to public garages or private garages.

440. In no case shall any person keep any larger quantity of rock oil, coal oil, water oil, carbon oil or other such oil, or gasoline or benzene than twenty-five barrels of all kinds within one mile of the banks of the Red River or the Assiniboine River in the said City, but nothing in this section contained shall apply to or be deemed to apply to the keeping of gasoline in any public or private garage.

441. No fire shall be lighted or used within the said last mentioned storage buildings either for heat, light or for any other purpose whatsoever, but nothing in this section contained shall apply to any private or public garage.

442. Every person desiring to keep or store in the manner provided by sections 437 to 441, inclusive of this By-Law, any of

the fluids mentioned in the said sections 437 to 441 inclusive, and every person desirous to keep or store for the purpose of sale, any of the fluids mentioned in the said sections, shall make a written application to the Standing Committee of Fire, Water, Light and Power of the said City for permission so to do, and state, in such application the store, house, shop, building or place in which he desires to keep or store the said fluids or any of them, and it shall be the duty of the Chief of the Fire Department of said City, upon any application being made, or at any other time if required so to do to examine the premises and report to the said Committee thereon, and upon such report the said Committee shall take action and grant or refuse permission as to them may seem fit subject, however, to the approval of the Council.

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443. GUNPOWDER. No person shall have or keep any quantity of gunpowder, dynamite or any other combustible substance or material exceeding twenty five pounds in any one place except in such powder magazines or place as may be approved of by the Council, after having received a report from the Building Inspector and the Chief of the Fire Department.

444. CALCIUM CARBIDE. In all buildings used or to be used for the purpose of keeping or storing calcium carbide in quantities of six hundred pounds or more, the same must be stored above ground (in approved metal packages) in buildings to be used exclusively for such purposes, and such buildings shall be isolated and detached at least fifty feet from any other building, and shall be constructed so as to be dry, waterproof and well ventilated.

445. SMOKE HOUSES. All smoke houses within the City shall be constructed throughout with incombustible material with ventilators at or near the top and guards not less than four feet above the fire bed, sufficient to prevent the meats from falling into the fire. If any smoke house shall open into any other building, such opening shall be protected by iron doors or shutters properly and thoroughly constructed.

446. BAY WINDOWS AND OTHER PROJECTIONS. No store or shop window or bay or oriel window or other projection except cornices over store fronts, and stair cornices and belt courses on any building shall project over any street line or other public property.

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447 TANNERIES AND MANUFACTORIES No person shall establish, set up, carry on or continue within the City any tannery, fellmongery or place for boiling soap, or for the melting of tallow or any manufactory of varnish, fireworks or coal oil, refinery or refineries or any factory which, from its nature or the materials used therein shall be dangerous in causing or promoting fires, unless and until he shall have obtained from the Building Inspector a certificate of compliance with every provision of every By-Law of the City of Winnipeg in that behalf. A permit for buildings of this class shall not be issued until approved by the Health Inspector.

### GASOLINE AND GARAGES

448 Not more than five gallons of gasoline shall be kept or stored in any public or private garage or in any other building of any kind whatsoever in the City of Winnipeg unless the same is kept or stored in good and efficient non-leakable metal containers which shall be kept tightly closed at all times except when actually being filled or emptied.

449 In cases where the capacity of any such container exceeds fifty gallons, such container shall comply with the following requirements:

450 Every such container shall be made of either black open hearth steel, at least one-quarter of an inch thick, in which case it shall be properly riveted and caulked, or shall be made of galvanized steel, of at least twelve gauge, in which case it shall be properly riveted and soldered. Every such container shall be a fixed tank and shall be efficiently coated on the outside with tar or other rust-resisting material.

451 Every such container shall have one vent pipe opening, one filler pipe opening, and one suction pipe opening therein, such openings to be at the top thereof, but shall have no other openings or pipe connections therein.

452 In every such filler pipe opening shall be inserted an efficient filler pipe which shall incline towards the tank, and shall be made of galvanized iron piping of at least two inches diameter, and provided with an efficient brass wire screen of at least thirty mesh and shall completely fill the opening, and

shall enter the tank at the top thereof and extend to within one inch of the bottom thereof, and shall be properly screwed into and soldered to the tank at its point of entry thereon, and shall have a lock screw cap to be kept properly locked when not in use at its upper end which end shall be on the outside of the building and which screw cap shall, in the case of any filler pipe extending to any sidewalk, avenue, street, road, alley, lane or public highway or place be protected by a cast iron box with an efficient lock thereon for locking the box which box shall be set and kept flush with the sidewalk or roadway, as the case may be and kept locked when not in use, such filler pipe shall run underground at a minimum depth of eighteen inches from the tank to the outside of the building and from thence to its termination shall be efficiently protected from fire and interference.

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453. In every vent pipe opening there shall be inserted an efficient vent pipe which shall be made of galvanized iron piping of at least one inch diameter, and shall completely fill such opening and shall enter at and be properly screwed and soldered to the top of the tank and shall be provided at its point of exit from the tank with a brass wire screen of at least thirty mesh and shall run underground at a minimum depth of eighteen inches from the tank to the outside of the garage and from thence shall be carried to a height of at least four feet above the roof of the building and terminate in a flexible goose-necked spark protector both openings of which shall be covered with a brass wire screen of at least thirty mesh.

454. In every suction pipe opening there shall be inserted an efficient suction pipe, which shall be made of galvanized iron piping, and shall completely fill the opening and shall enter at and be properly screwed and soldered to the top of the tank, and such pipe shall not at any point be lower than where it leaves the tank and throughout its course after it leaves the tank, shall be efficiently protected against fire or interference.

455. In no case shall the capacity of any such fixed tank exceed five hundred gallons.

456. Every fixed tank used in any public or private garage for containing gasoline shall be placed underground and the

By-Law 7528 top thereof shall be at least three feet underground, and such tank shall be either solidly enclosed with earth or, if placed in a vault, shall be solidly packed with sand or earth in such a way as to leave no space between the sides and top of the tank and the sides and the top of the vault, neither shall there be any space between the bottom of the tank and the floor of the vault, and such vault shall be well ventilated through separate flues or pipes and shall have iron man-holes and covers for clearance of tanks, but in no case shall any such vault or tank be located under any public street, sidewalk, road, avenue, lane, courtway, highway or place.

457. All pipes leading to and from any fixed tank used in any public or private garage for containing gasoline shall be of metal and shall be coupled together at every joint with airtight couplings, metal to metal, and shall run up towards the tank, and the filling of any such fixed tank with gasoline shall be done by means of the filler pipe which shall, whilst being used for that purpose, be coupled to the delivery tank by an airtight pipe or hose with airtight connections, metal to metal, when shall, whilst being used for that purpose, be coupled to the filler pipe and the delivery tank with airtight connections, metal to metal, and shall be done by daylight and only by competent persons, and no artificial light shall at any time be used about the place of filling.

458. No gasoline shall be drawn from any portable filling tank used in any public or private garage for containing gasoline, nor from any fixed tank used in any such garage for containing gasoline, save by means of approved suction pumps having a shut-off valve with ground key on the nozzle, and an automatic check valve between the pump and the nozzle. In no case shall there be any return or waste pipe to the tank.

459. No fixed tank used for containing gasoline shall connect, either directly or indirectly, with any public or private sewer, main, catch basin or pit within the limits of the City of Winnipeg.

460. No person shall permit any such oil, fluid or material as is herein referred to, either by itself or in combination with any liquid or solid, to flow into or enter any sewer, main, sewer connection, river, stream or coulee within the limits of the City of Winnipeg.

461 In addition to any other penalty, the sewer connection into which any such oil, fluid or material, as aforesaid, either by itself or in combination with any liquid or solid, shall be permitted to flow or enter shall be closed up by and under the direction of the City Engineer. By-Law  
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462 No garage (whether the same be a public or a private garage) wherein more than five gallons of gasoline are kept shall be lighted by any artificial light other than incandescent electric lights, which with all switches and cut-offs connected therewith shall be permanently and properly fixed and located at a height above the floor of at least four feet.

463 In all public and private garages there shall be placed and at all times kept at hand such pails, not more than thirty feet apart, metal receptacles without covers, each containing at least three cubic feet of sand and provided with an iron scoop, which sand shall be used for absorbing any gasoline which may fall on the floor or ground, and for fire extinguishing purposes and after the same shall have been used for any such purpose shall be removed from the garage premises. And no material, other than sand shall be used in any garage for absorbing any gasoline which may fall on the floor or the ground.

464 No person shall smoke or strike any match or light or have in his or her possession any lighted lantern, lamp, candle, torch, pipe, cigar or cigarette in any public garage or in any private garage wherein more than five gallons of gasoline are kept and a notice bearing in letters at least one inch and a half high the words "No Smoking," shall be displayed in a conspicuous place and manner at the entrance to and in each room in each floor or area at each entrance to every public garage and so that the lettering of the notice is plainly visible by persons using that part of the garage where same may be.

465 No gasoline shall be allowed to remain in any open can or open receptacle of any kind in, upon or about any public or private garage.

466 No change shall be made in the arrangement or construction of engines operated by gasoline or kerosene oil in any building without notice to and approval by the Inspector. Notice of intention to introduce gasoline or kerosene engines

By-Law 7528 into building shall be given to the Inspector who will make or cause to be made an inspection of the proposed location and if the same shall comply with the Winnipeg Charter and the By Laws of the City will issue a permit therefor

467 All rooms enclosing automobile feeds in garage and washup and engines operated by gasoline, kerosene oil or any other inflammable fluid shall be constructed of brick, stone or iron or other noncombustible materials, and the ceilings, doors and sutters thereof shall be covered with metal. The floors of all such rooms, in which automobiles containing live tanks of inflammable fluids are housed or sheltered shall be provided with water tight concrete floors scuppered to a depth of at least six inches.

468 No building hereafter erected shall be used as a public garage unless the same complies with the following conditions, neither shall any existing building be converted to such use unless the same complies with the following conditions, that is to say

(a) In case of buildings not exceeding one storey, such buildings must not have any wooden beams or posts in their construction and must have all their external and party walls made of brick or stone or some other equally substantial and noncombustible material and their floors must be watertight concrete floors, scuppered to a depth of at least six inches and their roofs must be covered with tin, iron zinc, copper, slates, tiles, felt and gravel or other non-combustible material

(b) In case of buildings exceeding one storey in height such buildings must be of fireproof construction throughout, save that their roofs may be covered with tin, iron, copper, zinc, slates, tiles, felt and gravel or other non-combustible material

469 From and after the passing of this By-Law, no building now or at any time hereafter erected shall be used as a public garage unless it complies with the following conditions, that is to say

a. If it does not exceed one storey in height, it must have no wooden beams or posts in its construction, and it must have all its external and party walls made of brick or stone or some other equally substantial and non-



combustible material, and its floors must be watertight concrete floors, scuppered to a depth of AT LEAST SIX INCHES, and its roof must be covered with tin, iron, zinc, copper, slates, tiles, felt and gravel or other non-combustible material. By-Law 7528

(b) If it exceed one storey in height, it must be of fireproof construction throughout, save that its roof may be covered with tin, iron, zinc, copper, slates, tiles, felt and gravel or other non-combustible material.

470. In all public garages the portion housing or sheltering automobiles shall be well ventilated and shall be separated from all feed, work, repair or storage rooms and a stair and elevator enclosures by brick fire walls, and fire doors and shutters shall be provided for all inside and outside wall openings, and in this connection a storage room means a room wherein gasoline is stored or kept.

471. No part of any building which, or any part of which is used as a hotel, tenement house or lodging house shall be used as a public garage.

472. No building hereafter erected shall be used as a private garage unless the same complies with the following conditions, nor shall any existing building be converted to such use unless the same complies with the following conditions, save that any such building may, if it is not used for accommodating or repairing more than one automobile at a time, be of frame construction, provided it be, in case any part thereof be nearer to any building than twenty feet (20 feet) properly and efficiently covered with metal, such buildings must comply with the following conditions, that is to say:

(a) If they do not exceed one storey in height they must have no wooden beams or posts in their construction and they must have all their external and party walls made of brick or stone or some other equally substantial and incombustible material, and their floors must be watertight concrete floors scuppered to a depth of at least six inches, and their roofs must be covered with tin, iron, zinc, copper, slates, tiles, felt and gravel or other non-combustible material.

(b) If they exceed one storey in height, they must be of fireproof construction throughout, save that their roofs

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may be covered with tin, iron, zinc, copper, slates, tiles, felt and gravel or other non combustible material. Every private garage, which shall be used for the accommodation for any purpose of more than one automobile at a time, shall comply with the provisions of sections 470 and 471 hereof in the same way as if it were a public garage, but this shall not apply to private garages now being used as such.

473. All private garages now being used as such may continue to be so used.

474. A building shall be deemed to be used as a public garage, within the meaning of this By-Law, if the same or any part thereof be used either as an automobile livery, or for accommodating any automobile (either free of charge pursuant to any undertaking given on sale or hire of same, or on payment of any fee or charge, with standing room or accommodation for any period of time, however long or short such period may be, or for the accommodation of any automobile in order to the letting or operating for gain of the same, or to the repairing (either free of charge pursuant to any undertaking given on sale or hire thereof, or on payment of any fee or charge, of the same, or the use of same in the instruction for gain or reward of any person in the use, management or reparation of automobiles, and the words "automobiles" and "automobile" where used in this By-Law, shall be construed to mean and include automobiles, locomobiles and all other vehicles propelled by any power other than muscular power, excepting traction engines and such motor vehicles as are run only upon rails or tracks, and the expression "public garage" where used in this By Law, shall be construed to mean and include any building which, or any part of which, shall be used for any of the purposes before mentioned in this section, and a building shall be deemed to be used as a private garage within the meaning of this By Law if the same or any part thereof be used for accommodating any automobile for any other purpose other than any of the purposes in this section before mentioned and the expression "private garage" where used in this By Law shall be construed to mean and include every building used for accommodating any automobile and which shall not be a public garage.

475. It shall be the duty of all persons connected with any public or private garage and of all persons making delivery of gasoline to any public garage or private garage to strictly observe the provisions relative thereto contained in sections 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 462, 463, 464, 465, 468, 469, 470, 471 and 472, and all such persons shall be liable for any breach of the observance thereof, but nothing in this section contained shall limit or be deemed to limit in any way the liability of any such person or of any other person who may be liable in respect of any breach or non-observance of any of the provisions of this By-Law.

476. Provided that if an application be made for a permit to erect a garage, and the majority of the owners of the property on the street in which it is proposed to erect said garage petition the Council against the erection thereof, the Building Inspector shall delay the issue of said permit for a month to enable the petitioners to be heard by the Council, and the Council to deal with such petition.

477. Provided that all applications for the erection of public garages shall be referred to the Council before the permits for the construction of same be issued.

478. No premises shall be used for the carrying on of any trade or business wherein gasoline or benzine is used in open vessels in quantities of more than one pint at any one time unless the premises in which such business or trade is carried on shall have first been inspected by the Building Inspector and found to conform to comply with the following requirements:

a) No premises shall be lighted by any artificial light other than incandescent electric light which with all switches and cut-offs connected therewith, shall be permanently and properly fixed and located at a height above the floor of at least four feet.

b) All such premises shall be properly ventilated with ventilators fixed and located in the wall of the room or rooms in which such gasoline or benzine is used and connecting directly with the outer air. Such ventilators shall be placed in the wall at a height of not more than six inches from the floor of such room or rooms.

c) The room or rooms in which such gasoline or

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benzine is stored, kept or used shall be heated either by hot air, hot water or steam, and no open hearth fires, stoves, grates or other means of heating shall be permitted on such premises.

(d) No lighted lamp, candle, lantern, torch or gas jet shall be permitted on such premises for any purpose whatsoever, nor shall any gas iron be used on any such premises.

476 No person shall smoke any material or light or smoke an pipe, cigar or cigarette on any such premises and a notice bearing in letters at least one inch and a half high the words "No Smoking" shall be displayed in a conspicuous place in said premises. It shall be lawful for the Building Inspector to enter upon and inspect all premises upon which any such business is carried on wherever gasoline or benzine is used, kept or stored. Any person who hinders or obstructs the Building Inspector in entering or inspecting any premises as aforesaid shall be liable, upon conviction thereof, to the penalty hereinafter provided for breaches of this by-law.

480 In case of inspection of such premises as aforesaid the Building Inspector finds that the same comply with the foregoing provisions of this by-law concerning such premises, he shall forthwith issue a certificate to the person or persons carrying on business therein, stating that such premises have been inspected by him and the date of such inspection.

481 The term "benzene" or "gasoline" wherever used herein, shall mean an product of petroleum or any hydrocarbon liquid that will flash or emit an inflammable vapor below the temperature of eighty-five degrees Fahrenheit. The Building Inspector shall test and decide the flashing point.

482 In all cases where gasoline or benzene is kept or stored in any building or any part thereof in the City of Winnipeg in any quantities exceeding one quart, but not exceeding one gallon, the same shall be kept or stored in good and efficient self-closing metal cans or containers of an individual capacity of not more than one gallon and shall have the word "Danger" legibly marked or painted thereon in letters of at least an inch high.

483. No vendor of gasoline or benzine shall sell or deliver to any person gasoline or benzine in the quantities referred to in the foregoing section hereof unless such gasoline or benzine is placed in self-closing metal cans or containers of the kind referred to in the said section. By Law  
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484. In no case shall any gasoline or benzine be delivered or carried into any house or other building in any open or uncovered can or other vessel.

485. No person shall use or occupy within the City any buildings or place for manufacture of turpentine, refined petroleum oil or kerosene, benzine, benzol, camphene, fireworks or other dangerous or easily flammable or explosive substances, or for the loading of or ridding or sheels or for the storage of fireworks of any description whatever or loaded cartridges or shells without first having obtained a permit from the City Council.

486. No person shall burn or place in any stove, grate or furnace or use in lighting or kindling fires in any dwelling house, shop or other building within the City, refined petroleum oil, kerosene, paraffine, gasoline, benzine, benzol, naphtha or other highly explosive or inflammable substances, provided always that nothing herein contained shall prevent the use of gas burners or oil stoves especially constructed for consuming oil.

#### GASOLINE VAPOR LIGHTING

487. No person shall install or maintain in the City of Winnipeg any gasoline vapor gas lighting system for the purpose of lighting any building or any portion of such building unless and until the said system shall have first been inspected by the Building Inspector and approved by the Council.

488. No gasoline tank used in connection with any such gasoline vapor gas lighting system shall be installed or maintained inside any building.

489. Any gasoline or gasoline vapor lamp or lamps used in connection with any such lighting system shall be placed and fixed at a distance of not less than twenty-four inches from any woodwork in such building.

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490. No piping or tubing used in connection with any such gasoline vapor gas lighting system shall be placed or fixed within six inches of any electric wire and in all cases where any such piping or tubing crosses an electric wire the said piping or tubing shall be properly insulated to prevent contact with such wire.

491. Every pressure tank and gasoline tank used in connection with any gasoline vapor gas lighting system shall be placed outside the building to be lighted by such system, and shall be enclosed in a strong box, well ventilated, the lid of which shall be securely locked at all times except when such tank or tanks is or are being charged or filled.

492. It shall be the duty of the Building Inspector to inspect from time to time and in any case as soon as possible after being requested so to do, every vapor gas lighting system installed or maintained in any building, or portion thereof in the City of Winnipeg and to keep a record of all such inspections. Every such gasoline vapor gas lighting system shall be inspected by him at least once in every year, and, in all cases where such systems are found to comply with the provisions of this By Law, he shall issue a certificate to that effect to the owner or occupier of the premises wherein such system is installed or maintained.

493. Any person who hinders or obstructs the said Building Inspector in making such inspection or who refuses to permit any such system used by him to be tested or who is guilty of any breach of the provisions of the foregoing paragraphs Nos 487 to 492 inclusive, shall be guilty of an offence against this By Law, and shall upon conviction therefor be liable to the penalties hereinafter prescribed for breaches of this By Law.

### GAS WORKS

494. No person, firm or corporation shall build or erect any gas works, including any retorts, scrubbers, purifiers or gas holders, within the limits of the City of Winnipeg without first applying for and obtaining the permission of the City Council, so to do. Every application to the City Council for such permission shall be accompanied by plans and specifica-

plans showing the site on which such gas works are to be erected, and illustrating the features of construction and equipment thereof. By-Law  
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The Council may by resolution grant such application. Any permission granted as aforesaid shall be subject to the provisions of this By-Law so far as the same are applicable thereto, and to the provisions of the Winnipeg Charter, and all Acts amending the same and to all existing and future By-Laws of the City of Winnipeg in so far as applicable thereto in force from time to time.

495. No gas works shall be erected or continued in that portion of the City of Winnipeg described as follows:

All that portion of the City of Winnipeg contained within the following limits, namely: Commencing at a point in the centre line of the Pembina Road where the centre line of Fleet Avenue meets the same, thence westerly in a straight line to and along the centre line of Fleet Avenue and the production thereof to the centre line of Cambridge Street, thence westerly along the centre line of Cambridge Street to the centre line of Lennon Avenue produced, thence westerly along the centre line of Lennon Avenue and the production thereof to the western City limits, thence northerly along the western City limits to the centre line of Portage Avenue thence easterly following along the centre line of Portage Avenue, and the production thereof to the centre line of Hargrave Street, thence southerly along the centre line of Hargrave Street and the production thereof in a straight line to the centre line of the Assiniboine River, thence easterly along the centre line of the Assiniboine River, to where it meets the centre line of Main Street produced, thence southerly along the centre line of Main Street to the centre line of River Avenue, thence westerly along the centre line of River Avenue to the centre line of Clark Street thence southerly along the centre line of Clark Street to the centre line of Wardlaw Avenue, thence westerly along the centre line of Wardlaw Avenue to the centre line of Pembina Street thence southerly along the centre line of Pembina Street to the centre line of Corydon Avenue thence westerly along the centre line of Corydon Avenue to the

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centre line of the Pembina Road, thence southwesterly along the said Pembina Road to the centre line of Fleet Avenue.

496. Should any gas works be, in the opinion of the Building Inspector of the City, constructed or placed in contravention of this By-Law, the complete pulling down or removal thereof is hereby authorized.

497. Such gas works shall be completely pulled down or removed, in manner hereinafter set out, at the expense of the owner thereof, and the cost of the same shall be certified by the said Building Inspector to the Tax Collector and be added to the taxes on the land occupied by such gas works and collected as other taxes.

498. The said Building Inspector is hereby required to notify the owner of any such gas works constructed or placed contrary to this By-Law that the same must not be continued, and must be pulled down or removed, and also that in the event of the same not being removed by such owner, the same will be pulled down or removed at his expense as aforesaid.

499. In the event of the owner of any such gas works failing to pull down or remove the same after notice to do so shall have been given to him, the Building Inspector of the City is hereby authorized to cause the same to be pulled down or removed, and the cost thereof shall be recovered as herein before provided.

500. PRIVATE STABLES. Should any person, firm or corporation be desirous of constructing a stable to accommodate more than four horses, such person, firm or corporation shall make application through the Building Inspector to the City Council for a permit to construct such stable, and, until such permit is granted, no such stable shall be commenced or constructed. Such application shall show the location, nature and extent of said building on the land upon which it is intended to erect same, and no such stable shall be erected within twenty feet of any dwelling.

501. LIVERY AND BOARDING STABLES. No livery stable, sale feed or boarding stable or stable in which horses



are to be kept for any or express purposes, shall be established or maintained within any of the following defined areas of the City of Winnipeg, viz:

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WARD ONE. Commencing at the intersection of the west line of Main Street with the waters' edge on the south side of the Assiniboine River, thence southerly along the westerly limit of Main Street to a point ninety-nine feet southerly from the southerly limit of River Avenue, thence westerly parallel with the southerly limit of River Avenue and at the uniform rectangular distance of ninety-nine feet therefrom to a point on the westerly limit of Wood Street, thence southerly along the westerly limit of Wood Street and continuing southerly in a straight line through Lots 153 and 154 Plan 52, D.C.S. 36 St. Boniface to the south line of Spadina Avenue, thence westerly along the southerly limit of Spadina Avenue to the west line of Clark Street, thence southerly along the westerly limit of Clark Street to the northerly limit of Wardlaw Avenue, thence westerly along the northerly limit of Wardlaw Avenue to the easterly limit of Joseph Street, thence southerly along the easterly limit of Joseph Street to a point one hundred and twenty feet south from the southerly limit of Gertrude Avenue, thence westerly, parallel with the southerly limit of Gertrude Avenue and at the uniform rectangular distance of one hundred and twenty feet therefrom to a point one hundred and thirty feet easterly from the easterly limit of Pembina Street, thence southerly parallel and distant one hundred and thirty feet easterly from the easterly limit of Pembina Street to the northerly limit of Corydon Avenue, thence westerly along the northerly limit of Corydon Avenue to a point one hundred and thirty feet westerly from the westerly limit of Amelia Street, thence northerly parallel and distant one hundred and thirty feet northerly from the northerly limit of Amelia Street and continuing parallel and at the uniform rectangular distance of one hundred and thirty feet westerly from the westerly limit of Harrow Street to its intersection at one hundred and thirty feet westerly from the westerly limit of Mitchell Street, thence northerly, at the uniform rectangular distance of one hundred and thirty feet easterly from the westerly limit of Mitchell Street to the waters' edge on the

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south side of the Assiniboine River, thence westerly along the waters edge (on the south side of the Assiniboine River, downstream to the place of commencement.

**WARD TWO** All that area bounded on the east side by Main Street, on the north by Portage Avenue on the west by line between Young and Spence Streets and on the south by the Assiniboine River.

**WARD THREE** All that area bounded on the east by the line between Young and Spence Street on the north by Portage Avenue, on the west by Maryland Street, and on the south by the Assiniboine River, also all that area bounded on the east side by Maryland Street on the north by Notre Dame Avenue, on the west by Victor Street and on the south by Portage Avenue.

**WARD FOUR** All that area commencing at a point two hundred and sixty four feet west from the westerly limit of Princess Street on the southerly limit of Alexander Avenue, thence westerly along the southerly limit of Alexander Avenue to the westerly limit of Isabel Street, thence southerly along the westerly limit of Isabel Street to the southerly limit of Elgin Avenue, thence easterly along the southerly limit of Elgin Avenue to the westerly limit of Isabel Street, thence southerly along the westerly limit of Isabel Street to the northerly limit of Notre Dame Avenue to the westerly limit of Adelaide Street, thence northerly along the westerly limit of Adelaide Street to the southerly limit of William Avenue, thence westerly along the southerly limit of William Avenue to a point twenty-five feet west from the westerly limit of Adelaide Street, thence in a direct line northerly to the point of commencement.

**WARDS FIVE AND SIX** All that area, commencing at a point one hundred feet easterly from the easterly limit of Main Street on the southerly limit of Mont Douglas Avenue, thence northerly parallel with the easterly limit of Main Street and at the uniform rectangular distance of one hundred feet, easterly therefrom to a point on the southerly limit of Aberdeen Avenue, thence westerly along the southerly limit of Aberdeen Avenue to a point one

hundred feet distant westerly from the westerly limit of Main Street, thence southerly parallel with the westerly limit of Main Street and at the uniform rectangular distance of one hundred feet westerly therefrom, to a point in the north line of Point Douglas Avenue to the point of commencement.

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402 LALINDRIF'S. No public laundry shall be erected, established or maintained within the area of the City bounded as follows:

(On the north by a line drawn parallel with and distant northerly one hundred feet (100 feet) from the northern limit of Broadway, from a point one hundred feet (100 feet) east of the eastern limit of Colony Street to the western limit of Lot Seventy-one (71), St. James, and the northern limit of the lane south of and adjoining Lots One to Twelve (112) D.G.S. Sixty-nine and Seventy (69-70), St. James, Plan Eight Hundred and Forty-two (842), and the straight production of said last mentioned northern limit to a point one hundred feet (100 feet) west of the western limit of Home Street, on the south by the Assiniboine River, on the east by a line drawn parallel with and distant easterly one hundred feet (100 feet) from the eastern limit of Colony Street and on the west by a line drawn parallel with and distant westerly one hundred feet (100 feet) from the western limit of Home Street.

403 LUMBER AND WOOD YARDS. It shall be lawful for the Building Inspector and his Assistants to enter upon all lumber yards and wood yards and all other places where wood, lumber or other inflammable materials are stored, with a view to enforce compliance with the provisions of this By-Law, and to require the owners or occupiers to take such precautionary measures against fire as may be necessary and proper.

No lumber or wood in any wood yard or lumber yard shall be piled within a distance of ten feet from any building in the vicinity of such wood yard or lumber yard, nor piled to a height greater than eight feet next to any street or lane or right-of-way of any railway, and all wood and lumber yards shall have roads passing from front to rear at least twelve feet wide and not more than thirty-two feet apart. Lumber piles shall not exceed twenty feet in height, and wood piles shall not

By Law 7528 exceed fourteen feet in height, unless permission to exceed such height shall have been obtained from the Committee on Fire Water Light and Power. After the passing of this By-Law no lumber yard or wood yard shall be established within the limits known as the Inside First Class Fire Limits.

504. **ASHES.** No person shall place or keep any ashes, removed from any stove or fireplace, in any wooden box or receptacle or within three feet of any wooden partition in his house or building, or in any outhouse or shed.

505. **LIGHTING FIRES IN STREETS.** No person shall raise or kindle a fire or furnish materials for a fire to be made or kindled in any street, alley or vacant place within the City, provided that this section shall not apply to fires made by tin smiths plumbers and other mechanics where the use of a fire is necessary for the purpose of cooling tar pitch, etc. to be used in the construction or repair of a building but all such fires shall be made in a crate or vessel so that the same shall not emit sparks or otherwise endanger surrounding property.

506. **SHAVING CHIPS, ETC.** Every building shop or yard in which any business or trade is carried on wherein large quantities of chips shavings, waste paper and other combustible waste materials of a similar nature are produced, shall be cleared of all accumulations of such waste materials at least three times every week unless such building, shop or yard is situated more than one hundred feet from the nearest building thereto. No lighted candle shall be used in any such shop or building, nor shall any stove be used therein unless the same is set in a box surrounded with fireproof material and having the stove pipe protected in the manner provided in this By-Law.

507. **STRIPPED BARK AND SAWDUST.** Every person owning or occupying any store, factory, workshop or structure or any part thereof, or any land where bark is stripped from poles or where poles are cut for black piling purposes, shall remove all stripped bark and sawdust from such places at least once during every working day in the week.

508. **HAY STRAW, ETC.** No person or persons shall place or permit to be placed any hay, straw or other like combustible material in his or her or their courtyard or lot of

ground, within one hundred feet of any building unless the same is securely covered, and no person shall have or keep any straw, cotton, hemp or wood shavings or rubbish in stacks or piles within the City, without securely covering the same so as to efficiently protect the same from flying sparks or other sources of danger from fire. By-Law 7528

500. VACANT BUILDINGS. The doors and windows of every vacant and unoccupied building shall be securely fastened and closed.

It shall be lawful for the Building Inspector or his Assistants to enter upon and inspect all vacant and unoccupied buildings for the purpose of ascertaining whether the same are a source of danger from fire. In all cases where any such building shall be found to be in an unsafe condition and a menace to surrounding property, by reason of fire or otherwise, the Inspector shall notify the owner or agent of such building to put same in a safe condition. In the event of the owner, agent or other person in charge in possession of any such building refusing or neglecting after notice as aforesaid, to forthwith put such building in a safe condition by removing all rubbish or other dangerous litter found in any such building, or by closing up any and all openings in any such building, shall be liable to the penalties of this By-Law.

It shall be the duty of the Chief of Police and of the Fire Department and the Officers of the Health Department, of the City of Winnipeg, to make reports to the Building Inspector of all vacant and unoccupied buildings having open doors or windows or other openings therein, likely to be or become a menace or source of danger to the surrounding property either by fire or otherwise.

5.0 When the owner or agent cannot be found, the posting of such notice upon said building for twenty-four hours shall be sufficient notice hereunder.

5.1 Provided that should such work be urgent and be required to be done without the delay necessary to give notice, the said work may be done without notice, and the cost thereof recovered as hereinbefore provided.

512 SEWER AND WATER CONNECTIONS. Any building hereafter erected upon any property which fronts or

By-Law 7528. abuts upon any street or lane in which both sewer and water mains exist, shall be connected with water and sewer mains.

§13. PIT CLOSETS. In the case of water closets, privies and privy vaults, where sewer and water connection cannot be installed, as provided in the previous section, a concrete or other pit, lined with cement so as to be perfectly watertight, shall be provided and such pit shall be at least four feet long, three feet wide and four and one-half feet deep. All pits shall be laid with brick and in cement with a floor of cement at least six inches in thickness, so as to be impervious to water. The walls of the pit shall be carried at least six inches above the level of the lot and no such closet shall be placed nearer than four feet from any lane.

§14. TEMPORARY CLOSETS. Every builder or contractor engaged in the construction of any building or work shall construct and place for the use of the men employed on such building or work, a temporary surface closet, in accordance with the provisions of the By-Law relating to Public Health.

§15. INNER FIRST-CLASS FIRE LIMITS. Inner first class limits, within which no lumber or wood yard shall be established, and within which no wooden sheds, galvanized storage sheds, frame outhouses, private garages or other structures of any kind, whether wholly or partly enclosed, shall be erected, and within which all roofs shall be constructed with coverings of noncombustible material, excepting contractor's sheds or offices, to be used during the construction of buildings and then removed from said limits.

Commencing at a point of intersection in the centre line of Henry Avenue with the waters' edge of the Red River, thence westerly along the centre line of Henry Avenue to its intersection with the centre line of Isabel Street, thence in a southerly direction, and following the centre line of Isabel Street and the production thereof with the centre line of Kennedy Street, thence following the centre line of Kennedy Street to the centre line of Graham Avenue, thence easterly along the centre line of Graham Avenue to the centre line of Smith Street, thence southerly along the centre line of Smith Street to the waters' edge of

the Assiniboine River, thence along the waters' edge of the Red and Assiniboine Rivers to the point of commencement. By-Law 7528

**§16. FIRE LIMITS.** The following defined areas of the City of Winnipeg shall be and are known as being within the First Class Fire Limits, that is to say:

Commencing at a point where the northerly limit of Notre Dame Avenue East meets the waters' edge of the Red River, thence following the waters' edge along the westerly side of the Red River downstream to where the same is met by the centre line of Gomez Street, produced in a straight line southerly thereat, thence northerly in a straight line to and along the centre line of Gomez Street to a point one hundred and thirty feet southerly at right angles from the southerly limit of Higgins Avenue, thence easterly and northerly at a uniform rectangular or radial distance of one hundred and thirty feet from the southerly and easterly limit of Higgins Avenue to the waters' edge of the Red River, thence westerly along the said waters' edge to a point one hundred and thirty feet westerly at right angles from the westerly limit of Higgins Avenue, thence southerly and westerly at a uniform rectangular or radial distance of one hundred and thirty feet from the westerly and northerly limit of Higgins Avenue to the centre line of Gomez Street at a point, thence northerly, following along the centre line of Gomez Street and the straight production thereof to the centre line of Disraeli Street, thence easterly along the centre line of Disraeli Street and the straight production thereof to the waters' edge of the Red River, thence northerly along the waters' edge of the Red River downstream to the northerly boundary of Lot 4 of the Parish of Kildonan, thence westerly along said northerly boundary to a point one hundred feet westerly at right angles from the westerly limit of Atkins Street, or the straight production northerly thereof, thence southerly, and at a uniform rectangular distance of one hundred feet westerly from the westerly limit of Atkins Street, or the straight production thereof to the southerly limit of Athol Avenue, thence westerly along the southerly limit of Athol Avenue to a point one hundred feet westerly at right angles from the westerly limit of Powers Street, thence

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southerly at a uniform rectangular distance of one hundred feet westerly from the westerly limit of Powers Street to a point one hundred and thirty two feet northerly at right angles from the northerly limit of Anderson Avenue, thence westerly at a uniform rectangular distance of one hundred and thirty two feet northerly from the northerly limit of Anderson Avenue to a point ninety-nine feet westerly at right angles from the westerly limit of McGregor Street, thence southerly at a uniform rectangular distance of ninety nine feet westerly from the westerly limit of McGregor Street to a point one hundred and ten feet northerly at right angles from the northerly limit of Selkirk Avenue, thence westerly at the uniform rectangular distance of one hundred and ten feet northerly from the northerly limit of Selkirk Avenue to the centre line of Sinclair Street, thence southerly along the centre line of Sinclair Street and the straight production thereof to the centre line of Higgins Avenue, thence westerly along the centre line of Higgins Avenue and its straight production to the centre line of McPhillips Street, thence southerly along the centre line of McPhillips Street to a point ninety nine feet northerly at right angles from the northerly limit of Notre Dame Avenue, thence westerly at the uniform rectangular distance of ninety nine feet northerly from the northerly limit of Notre Dame Avenue to the centre line at right of way of the Canadian Pacific Railway Southwestern Branch, Plan 354, thence southerly along the centre line of the right of way of the Canadian Pacific Railway Southwestern Branch to a point one hundred and thirty feet southerly at right angles from the southerly limit of Notre Dame Avenue, thence easterly and at the uniform rectangular distance of one hundred and thirty feet southerly from the southerly limit of Notre Dame Avenue to a point one hundred and thirty feet westerly at right angles from the westerly limit of Arlington Street, thence southerly and at the uniform rectangular distance of one hundred and thirty feet westerly from the westerly limit of Arlington Street to a point one hundred and thirty feet northerly at right angles from the northerly limit of Portage Avenue, thence westerly and at the uniform rectangular distance of one hundred and thirty feet northerly from the northerly limit

Portage Avenue to the centre line of Strathcona Street,



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thence southerly along the centre line of Strathcona Street and the straight production thereof to the waters' edge of the Assiniboine River, thence easterly along the waters' edge of the Assiniboine River downstream to where it meets the centre line of Arlington Street, thence southerly in a straight line crossing the Assiniboine River to the point where the centre line of Mitchell Street meets the waters' edge of the Assiniboine River on the south side, thence southerly along the centre line of Mitchell Street to its intersection with the production northerly of the centre line of Harrow Street, thence southerly in a straight line to and following along the centre line of Harrow and Amelia Streets to a point one hundred and twenty feet westerly at right angles from the southerly limit of Jesse Avenue, thence easterly and at the uniform rectangular distance of one hundred and twenty feet southerly from the southerly limit of Jesse Avenue to the centre line of Lilac Street, thence southerly along the centre line of Lilac Street to the centre line of Rosser Avenue, thence easterly along the centre line of Rosser Avenue to a point one hundred and thirty feet westerly at right angles from the westerly limit of Pembina Street, thence southerly and at the uniform rectangular distance of one hundred and thirty feet westerly from the westerly limit of Pembina Street to the northerly limit of Kylemore Avenue, thence easterly and along said northerly limit of Kylemore Avenue and the straight production thereof to a point one hundred and thirty feet easterly at right angles from the easterly limit of Pembina Street, thence northerly and at the uniform rectangular distance of one hundred and thirty feet easterly from the easterly limit of Pembina Street to the centre line of McMillan Avenue, thence easterly along the centre line of McMillan Avenue to the production southerly of the centre line of Joseph Street, thence northerly to and along the centre line of Joseph Street and the production thereof to the centre line of Spadina Avenue, thence easterly along the centre line of Spadina Avenue and its straight production to the waters' edge of the Red River, thence following the waters' edge on the west side of the Red River downstream in a northerly direction to the point of commencement.

By-Law 7528      §17 SECOND CLASS FIRE LIMITS. The following defined areas of the City of Winnipeg shall be and be known as being within the Second Class Fire Limits, that is to say

All those lands lying north of Portage Avenue, bounded on the north by a line drawn parallel with and distant northerly two hundred and sixty feet from the northerly limit thereof, on the east by a line drawn parallel with and distant one hundred and thirty feet westerly from the westerly limit of Arlington Street, and on the west by the centre line of Strathcona Street, excluding therefrom those portions thereof contained within the heretofore described First Class Fire Limit. All the lands lying on both sides of Notre Dame Avenue between two lines drawn on each side of said avenue and at a uniform rectangular distance of one hundred and thirty feet northerly from the northerly limit of said avenue and one hundred and thirty feet southerly from the southerly limit of said avenue, extending from the centre line of the right-of-way of the Canadian Pacific Railway Southwestern Branch, Plan 374, to the westerly limit of Keewatin Street and its straight production southerly

### STREET ALIGNMENT

§18. Upon lots fronting or abutting or adjoining upon Blanchard Street, throughout in the City of Winnipeg, no building or other structure shall be erected or placed within a distance of twenty feet measured at right angles from the street line

§19. Upon lots fronting or adjoining or abutting upon Central Avenue and upon lots fronting, adjoining or abutting upon Assiniboine Avenue in the area of the City of Winnipeg, bounded on the north by Cornish Avenue and on the south, east and west by the Assiniboine River on either side of the said avenue, no building or other structure shall be erected or placed within the distance of thirty feet measured at right angles from the street line.

§20. Upon lots fronting adjoining or abutting upon Central Avenue in the City of Winnipeg upon either side thereof no building or other structure shall be placed within a distance of thirty feet measured at right angles from the street line

521 Upon the lots fronting, adjoining or abutting upon that portion of Ashinboine Avenue, south of Blanchard Street and west of Central Avenue in the City of Winnipeg, on either side thereof, no building or other structure shall be placed within a distance of thirty feet measured at right angles from the street line By-Law  
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522 Upon lots fronting, abutting or adjoining upon Dorchester Avenue between Westworth and Elgar Streets in the City of Winnipeg, no building or other structure shall be erected or placed on either side of said avenue within a distance of thirty feet measured at right angles from the street line

523 NON COMPLIANCE WITH BY-LAW AFTER NOTICE. In all cases not otherwise specified in this By-Law when the Building Inspector may detect any imperfection, improper construction, defect, omission or neglect by which any building or part thereof may become dangerous to the public safety, he shall immediately notify the owner, agent or person having charge or possession of such building or part thereof to remedy such imperfection, improper construction, defect, omission or neglect within five days after the service of such notice upon him, and if such owner, agent or person having charge or possession of such building for five days after the receipt of such notice neglects to comply with the same, he shall be subject to the penalties of this By-Law, and every subsequent failure or neglect for twenty-four hours after any and every subsequent notice shall be deemed a new and subsequent offence, and shall render the owner, agent or person having the charge or possession of such building as aforesaid, so notified and making default, liable again to the penalties of this By-Law

524 PENALTIES FOR BREACH OF THIS BY-LAW. Any person guilty of a breach of any of the provisions of this By-Law, shall unless otherwise specifically provided for by any provisions of this By-Law, on conviction before the Mayor, Police Magistrate or any Justice or Justices of the Peace having jurisdiction in the City of Winnipeg, forfeit and pay at the discretion of the said Mayor, Police Magistrate, Justice or Justices of the Peace convicting, a penalty of not less than five dollars and not exceeding the sum of fifty dollars, in addition to costs for each offence, and in default of immediate payment

By-Law 7528 thereof it shall be lawful for the Mayor, Police Magistrate or Justice of the Peace convicting as aforesaid to issue a warrant under his hand and seal, and in case the said Mayor, Police Magistrate, Justice or Justices of the Peace or any two or more of them acting thereon, then under the hand and seal of one of them, to levy the said penalty and costs, or penalty, or costs only by distress and sale of the offender or offenders goods and chattels, and in case of no sufficient distress to satisfy the the said penalty and costs, or penalty or costs it shall be lawful for the said Mayor, Police Magistrate, Justice or Justices of the Peace convicting as aforesaid, or any one of them to commit the offender or offenders to the common gaol of the Eastern Judicial District of Manitoba, or to the lock-up house in the City of Winnipeg, for any period not exceeding twenty-one days, unless said penalty and costs, or penalty or costs be sooner paid.

525 By this By Law the following By Laws and amendments to the Building By Law are hereby repealed, and except such of them as are re-enacted under this By Law, are consold. dated herein, viz 2450, 2497, 2155, 2733, 2745, 2935, 3036, 3069, 3098, 3157, 3158, 3615, 4143, 4160, 4196, 4225, 4254, 4283, 5075, 5428a, 5466, 554., 5802, 5812, 5816, 5850, 5866, 5875, 5897, 5904, 5911., 5926, 5942, 6122, 6128, 6299, 6325, 6334, 6344, 6367, 6405, 6887, 6915, 6864, 6941, 6963, 7360, 7361, 7399, 7400, 7408, 7439, 7446, 7459, 7470 and 7482.

# BY-LAW No. 7656

A By-Law of the City of Winnipeg to amend By-Law No. 7528, being the Winnipeg Building By-Law for 1913.

[Passed April 7th, 1913.]

The Municipal Council of the City of Winnipeg, in Council assembled, enacts as follows:

1. By Law No. 7528 is hereby amended by striking out Section 1-4 thereof and substituting therefor the following:—

**REINFORCED BRICKWORK.** Whenever an approved reinforcement is used and laid in the manner hereafter described the dimensions given for the thickness of walls may be reduced as follows, viz.:—

In all walls of seventeen, 17, inches and less in thickness a reduction of four (4) inches may be made. In all walls of twenty one (21) inches and over a reduction of nine (9) inches may be made. Provided however, that no such reinforced wall shall have a greater vertical height than thirty-six (36) feet without being increased four (4) inches in thickness. Such reduction shall be in accordance with and as illustrated by the following table:—

TABLE OF WALL THICKNESS WHEN REINFORCED

No. of Storeys	Foundation Walls		1st ft. in.	2nd in.	3rd in.	4th in.	5th in.	6th in.	7th in.	8th in.	9th in.	10th in.
	Masonry	Brick										
One	18	9	9									
Two	20	9	9	9								
Three	22	13	13	9	9							
Four	24	13	13	13	9	9						
Five	27	17	13	13	13	9	9					
Six	30	17	17	13	13	13	9	9				
Seven	35	21	17	17	13	13	13	9	9			
Eight	35	21	17	17	17	13	13	13	9	9		
Nine	38	25	21	17	17	17	13	13	13	9	9	
Ten	40	25	21	21	17	17	17	13	13	13	9	9

## ERECTION AND REMOVAL OF BUILDINGS, FIRE LIMITS, ETC

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'One layer of reinforcement shall be used for every layer of brick in the width of the wall and for every second course of the height thereof, and shall be firmly bedded in the mortar joints. The reinforcements shall be continuous, and where a joint occurs in same the ends shall be lapped at least six (6) inches.'

2. Said By Law No. 7528 is hereby further amended by striking out Section 510 thereof and substituting therein the following

5.6 FIRE LIMITS. The following defined areas of the City of Winnipeg shall be and be known as being within the First Class Fire Limits, that is to say

'Commencing at a point where the northerly limit of Notre Dame Avenue East meets the waters' edge of the Red River, thence following the waters' edge along the westerly side of the Red River down stream to where the same is met by the centre line of Gomez Street produced in a straight line southerly thereon, thence northerly in a straight line to and along the centre line of Gomez Street to a point one hundred and thirty feet (130) southerly at right angles from the southerly limit of Higgins Avenue, thence easterly and northerly at a uniform rectangular or radial distance of one hundred and thirty feet (130) from the southerly and easterly limit of Higgins Avenue to the waters' edge of the Red River, thence westerly along said waters' edge to a point one hundred and thirty feet (130) westerly at right angles from the westerly limit of Higgins Avenue thence southerly and westerly at a uniform rectangular or radial distance of one hundred and thirty feet (130) from the westerly and northerly limit of Higgins Avenue to the centre line of Gomez Street aforesaid thence northerly following the centre line of Gomez Street and the straight production thereof to the centre line of Disraeli Street, thence easterly along the centre line of Disraeli Street and the straight production thereof to the waters' edge of the Red River, thence northerly along the waters' edge of the Red River down stream to the northerly boundary of Lot 4 of the Parish of Kildonan, thence westerly along said northerly boundary to the western limit of McGregor Street, thence southerly along said

western limit to the northern limit of Lot Three (3) of said Parish, thence westerly along said northern limit to a point one hundred (100) feet westerly from the westerly limit of Sinclair Street thence southerly at a uniform rectangular distance of one hundred (100) feet westerly from the westerly limit of Sinclair Street and the straight production thereof to the centre line of Higgins Avenue, thence westerly along the centre line of Higgins Avenue and its straight production to the centre line of McPhillips Street thence southerly along the centre line of McPhillips Street to a point ninety nine (99) feet northerly at right angles from the northerly limit of Notre Dame Avenue thence westerly at the uniform rectangular distance of ninety nine (99) feet northerly from the northerly limit of Notre Dame Avenue to the centre line of right of way of the Canadian Pacific Railway Southwestern Branch, Plan 374 thence southerly along the centre line of the right of way of the Canadian Pacific Railway Southwestern Branch to a point one hundred and thirty (130) feet southerly at right angles from the southerly limit of Notre Dame Avenue thence easterly and at the uniform rectangular distance of one hundred and thirty (130) feet southerly from the southerly limit of Notre Dame Avenue to a point one hundred and thirty (130) feet westerly at right angles from the westerly limit of Arlington Street thence southerly and at the uniform rectangular distance of one hundred and thirty (130) feet westerly from the westerly limit of Arlington Street to a point one hundred and thirty (130) feet northerly at right angles from the northerly limit of Pirage Avenue, thence westerly and at the uniform rectangular distance of one hundred and thirty (130) feet northerly from the northerly limit of Pirage Avenue to the centre line of Strathcona Street thence southerly along the centre line of Strathcona Street and the straight production thereof to the waters edge of the Assiniboine River thence easterly along the waters edge of the Assiniboine River down stream to where it meets the centre line of Arlington Street thence southerly in a straight line crossing the Assiniboine River to the point where the centre line of Mitchell Street meets the waters edge of the Assiniboine River on the south side,

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thence southerly along the centre line of Mitchell Street to its intersection with the production northerly of the centre line of Harrow Street, thence southerly in a straight line to and following along the centre line of Harrow and Amelia Streets to a point one hundred (.100) feet southerly at right angles from the southerly limit of Fleet Avenue, thence easterly and at the uniform rectangular distance of one hundred feet (.100) southerly from the southerly limit of Fleet Avenue to a point one hundred and thirty feet (130) westerly at right angles from the westerly limit of Pembina Street, thence southerly and at the uniform rectangular distance of one hundred and thirty (130) feet westerly from the westerly limit of Pembina Street to the northerly limit of Kylemore Avenue, thence easterly along said northerly limit of Kylemore Avenue and the straight production thereof to a point one hundred and thirty (130) feet easterly at right angles from the easterly limit of Pembina Street, thence northerly and at the uniform rectangular distance of one hundred and thirty (130) feet easterly from the eastern limit of Pembina Street to the centre line of McMillan Avenue, thence easterly along the centre line of McMillan Avenue to the production southerly of the centre line of Joseph Street, thence northerly to and along the centre line of Joseph Street and the production thereof to the centre line of Spadina Avenue, thence easterly along the centre line of Spadina Avenue and its straight production to the waters' edge of the Red River, thence following the waters' edge on the west side of the Red River down stream in a northerly direction to the point of commencement."



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